United States
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Natural
Resources
Conservation
Service

In cooperation with
Illinois Agricultural
Experiment Station

Soil Survey of Adams County, Illinois

Part I

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How To Use This Soil Survey

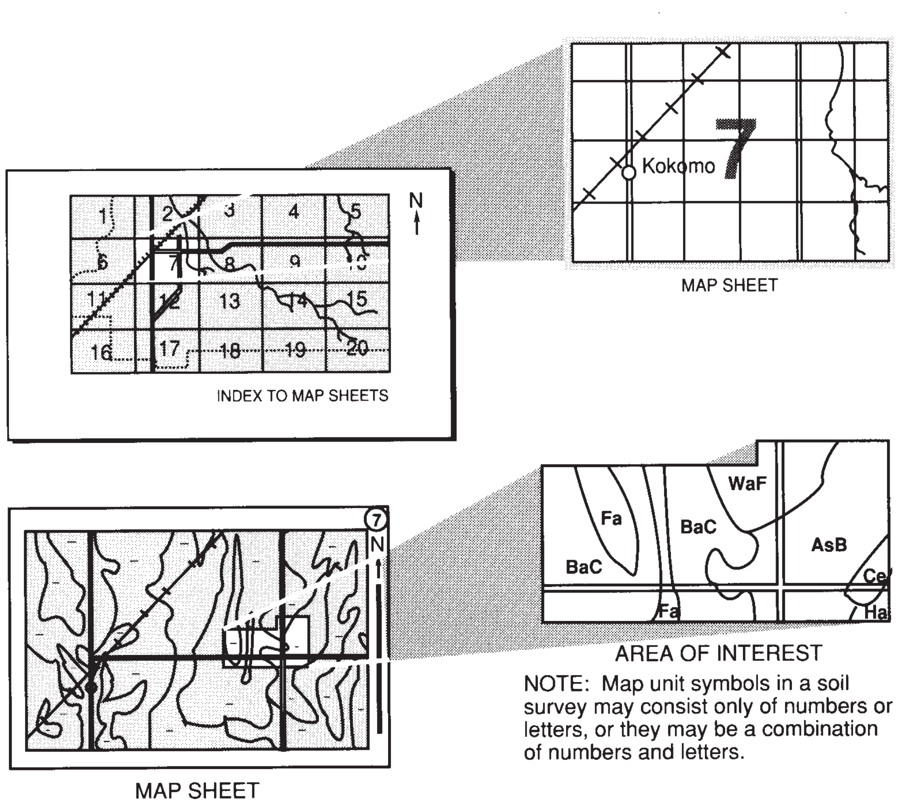
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents** in Part I, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** in Part II shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** in Part I and Part II for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1996. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1997. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Adams County Soil and Water Conservation District. Financial assistance was provided by the Adams County Board and the Illinois Department of Agriculture.

Cover: An area of cropland in Adams County. Creal soils are in the foreground, and Lacrescent soils are on the wooded side slopes.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Foreword

This soil survey contains information that affects land use planning in Adams County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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State Conservationist
Natural Resources Conservation Service

Soil Survey of
Adams County, Illinois

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How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Fieldwork in Adams County consisted primarily of soil transects conducted by soil scientists. Soil transects provide a systematic method for sampling a specific soil type. Soil borings are taken at regular intervals. Soil scientists then record the characteristics of the soil profiles that they studied. They note soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features. This information can then be used to run statistical analyses for specific soil properties. The results of these analyses, along with other observations, enable the soil scientists to assign the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for

comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses. Soil scientists interpret the data from these analyses as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

Aerial photographs used in this survey were taken in 1993, 1994, 1995, and 1996. Soil scientists also studied U.S. Geological Survey topographic maps (enlarged to a scale of 1:12,000) and orthophotographs to relate land and image features. Specific soil boundaries were drawn on the orthophotographs. Soil boundary lines were adjusted to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

General Nature of the County

Pam Peter, resource conservationist, Adams County Soil and Water Conservation District, helped prepare this section.

Adams County is the westernmost county in Illinois (fig. 1). It is bounded by Hancock County on the north; by Schuyler, Brown, and Pike Counties on the east; by Pike County on the south; and by the Mississippi River on the west. The total area of the county, including water, is 557,470 acres (U.S. Department of Commerce, 1994). In 1994, the population of Adams County was 66,329. Quincy, the county seat and largest city in the county, had a population of 39,859 (Two Rivers Regional Council of Public Officials, 1994).

This soil survey updates an earlier survey of Adams

Figure 1.—Location of Adams County in Illinois.

County published in 1979 (Bushue, 1979). It provides additional data and updated soil interpretations and has larger maps, which show the soils in greater detail.

History and Settlement

The first Europeans to visit the survey area were the two great French explorers, Father Marquette and Louis Joliet, who traveled the upper Mississippi River in 1673. Adams County was established as a separate county in 1825. The county's first settler was Justus I. Perigo, who settled in what is now Fall Creek Township in the southwestern part of the county in 1821.

The founder of Adams County and the city of Quincy was John Wood. Wood later became State Senator, Lieutenant Governor, and Governor of Illinois. He was an outstanding officer in the Civil War. His home, a Southern-style mansion, now houses the Quincy Historical Society and is one of the Prairie State's leading architectural and historic landmarks.

In 1858, the sixth Lincoln-Douglas debate took place in Quincy at the present site of Washington Park. It is estimated that 10,000 to 12,000 people attended this debate (Drury, 1955).

Adams County has well developed transportation facilities. These include Federal and State Highways, railroads, buses, barges, and an airfield. U.S. Highways 24 and 172 and State Highways 57, 61, 94, 96, and 104 provide good access to cities, towns, and outlying areas throughout the county.

Agriculture

Agriculture is a major economic force in Adams County. In 1992, the county had 1,500 farms that made up 464,834 acres. The average farm size was 310 acres (U.S. Department of Commerce, 1994). In 1996, Adams County ranked among the top ten counties in Illinois in numbers of total cattle and in numbers of milk cattle and beef cattle. Corn, soybeans, wheat, and hay are the major crops. In 1996, about 153,000 acres was used for corn, about 126,000 acres was used for soybeans, about 36,400 acres was used for wheat, and about 24,600 acres was used for hay. Also grown in the county are sorghum and specialty crops, such as sweet corn, sod, ornamental plants, and nursery stock. There are several orchards. Hogs and cattle are the main livestock. In 1996, the number of swine was 93,500 and the number of cattle was 42,300 (Illinois Department of Agriculture and USDA, 1997).

Physiography, Relief, and Drainage

Adams County has extremes in topography. The majority of the county lies in the Galesburg Plain, but the western edge of the county is in the Dissected Till Plains Section. Both of these physiographic divisions are part of the Central Lowland Province (Leighton and others, 1948). The northeastern and central parts of the county have large, nearly level areas that are part of a relatively undissected upland drainage divide between the Mississippi and Illinois Rivers. Other large nearly level areas are on the flood plain along the Mississippi River. Small nearly level areas and larger gently sloping to very steep areas are in other parts of the county. The present topography is mainly the result of erosion, even though the Illinoian terminal moraine extends from about the northwestern part of the county to the southeastern part. The highest point in the county is about 860 feet above sea level and is near the southwest corner of the county. The lowest point is about 460 feet above sea level and is on the flood plain along the Mississippi River near the southwest corner of the county. Of interest is a home belonging to the Funk family near the village of Beverly. Water falling on the east side of the home drains into the Mississippi River, and water falling on the west side of the home drains into the Illinois River.

Pigeon, Mill, and Bear Creeks are the major tributaries to the Mississippi River from Adams County. The Illinois River basin is drained by McKee Creek and tributaries of the LaMoine River.

Soils in the upland areas of the county formed mainly in loess and glacial drift. The combined thickness of these materials is mostly 30 to 60 feet. The soils on bottom land formed in sandy to clayey water-deposited material. This material is more than 100 feet thick throughout most of the Mississippi River flood plain and 5 to 50 feet thick on small flood plains in the county.

The native vegetation of Adams County was primarily hardwood timber, but the nearly level prairie areas in the northeastern and central parts of the county supported native prairie grasses and forbs.

Water is plentiful on most of the flood plain along the Mississippi River. In the upland part of the county, the supply of water is generally sufficient for farm use. Most wells are drilled into limestone or, in places, into sand or gravel beds in the glacial drift. More than 2,500 water impoundments cover nearly 2,700 acres in Adams County. Several rural water districts serve Adams County and its towns and villages.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Quincy in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 27.1 degrees F and the average daily minimum temperature is 19.0 degrees. The lowest temperature on record, which occurred on December 22, 1989, is -22 degrees. In summer, the average temperature is 74.3 degrees and the average daily maximum temperature is 84.4 degrees. The highest recorded temperature, which occurred on July 14, 1954, is 112 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 39.69 inches. Of this total, 28.45 inches, or about 72 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.84 inches on June 14, 1950. Thunderstorms occur on about 48 days each year, and most occur in June and July.

The average seasonal snowfall is 23.2 inches. The greatest snow depth at any one time during the period of record was 21 inches. On the average, 38 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 61 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 71 percent of the time possible in summer and 48 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 12 to 14 miles per hour, from November to April.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Factors of Soil Formation

Ronald Collman, soil scientist, Natural Resources Conservation Service, helped prepare this section.

Soil forms through several processes that act on deposited geologic material. The major factors of soil formation are the physical and mineralogical composition of the parent material; the climate under which the soil material has accumulated and existed since accumulation; the type of living organisms on and in the soil; relief; and the length of time that the soil-forming factors have acted on the parent material (Fehrenbacher and others, 1968).

Climate and plant and animal life are active factors of soil formation. They act directly on the parent material that has accumulated in place through the weathering of rocks or that was deposited through the action of water, wind, or glaciers and slowly change it into a natural body that has genetically related horizons. Relief also affects the processes of soil formation. It can inhibit soil formation on the steeper, eroded slopes and in wet, depressional or nearly level areas by controlling the amount of moisture in the soils. Finally, time is needed to change the parent material into a soil that has distinct horizons.

The factors of soil formation are so closely interrelated and conditioned by each other that few generalizations can be made regarding the effects of any one factor unless conditions are specified for the others.

Parent Material

Parent materials are determined by the geology of an area and control the chemical and mineralogical composition of the soil at the beginning of soil formation. Weathering and biological activities gradually change the composition of the soil as it develops. Parent material includes all organic and inorganic materials that are at the earth's surface. In places, old weathered bedrock material and old soil material become parent material for the continuing soil development at the land surface.

Parent materials in Adams County are loess, glacial till, alluvium, colluvium, eolian sand, Cretaceous sediments, and bedrock residuum.

Loess is windblown silt that was deposited by winds that carried it from major stream valleys and outwash plains as glacial ice melted. Loess blankets the uplands of Adams County. The texture of the loess becomes finer with increasing distance from the Mississippi River Valley. Loess is relatively young in geologic terms and covers much of the Midwest. It is the parent material of many of the soils in the uplands of Adams County. The loess ranges from 6 to 25 feet in thickness in nearly level areas and is thinner in the eastern part of the county than in the western part. Several soils in the county formed completely in loess; others in the more sloping areas formed in a thin layer of loess and an underlying parent material of different origin (fig. 2). Some of the deep loess soils that formed under forest vegetation are the Stookey and Timula soils on the bluffs along the Mississippi River and the Keomah, Menfro, Rozetta, and Winfield soils in areas farther from the bluffs. Deep loess soils that formed under grass vegetation and that have a dark surface layer include the Biggsville soils along the Mississippi River bluffs and the Edwardsville, Osco, Timewell, Ipava, and Virden soils in areas farther from the bluffs.

Glacial till is a mixture of materials produced by glaciers. The materials range in size from clay to stones. The materials deposited by the ice sheets are from distant sources as well as from local sources. In Adams County, tills from the early glacial advances came from the direction of Iowa and Lake Michigan. Distant sources are indicated by the rocks and minerals that are present, such as granite, quartzite, diorite, galena, and pyrite. Local sources are indicated by angular chert, limestone, geodes, and shale fragments that were eroded from surrounding landscapes. The youngest tills in Adams County were deposited by the Illinoian glacier. These tills are in the northeastern part of Adams County and are composed of materials from northern and northeastern sources as well as from the materials

Figure 2.—Loess overlying glacial drift and limestone bedrock.

that were transported by previous glaciers. Hickory soils occur in moderately steep and steep areas where Illinoian till is near the surface. There are at least two other kinds of till that are older than the Illinoian tills, but they are difficult to distinguish in places because their properties and appearance are similar to those of the Illinoian tills. These older tills are collectively called pre-Illinoian till. They are derived from materials from northwestern and northeastern sources as well as from local sources. Lindley soils occur where pre-Illinoian tills are near the surface in moderately steep or steep areas. Pre-Illinoian tills and their associated soils may outcrop below Illinoian till soils in steep, very dissected areas in the northern part of Adams County. Paleosols are soils that formed in Illinoian or pre-Illinoian glacial till during an interglacial period prior to the last glacial advances of Wisconsinan age. Although the Wisconsinan glaciers did not reach Adams County, the predominant loess deposits are a result of that last glacial advance. The strongly developed paleosols in Adams County typically have a very high content of clay. Atlas, Coatsburg, Keswick, and Ursa soils formed in less than 20 inches of loess and in the underlying paleosol. Fishhook and Keller soils formed in 20 to 40 inches of loess and in the underlying paleosol. In steep and very steep areas, the paleosol has been eroded and a modern soil has formed in the loess and underlying glacial till. Hickory and Lindley soils formed in this material.

Alluvium is water-deposited sediment. Stream alluvium, valley-side alluvium, and pedisediment are the three types of alluvium in Adams County. Stream alluvium consists of well sorted, stratified sediments on flood plains and stream terraces. The materials that make up stream alluvium can be eroded from anywhere upstream within the watershed. Streambanks in Adams County commonly expose the alluvial history of the stream. Many of the soils in the county formed in stream alluvium. Blyton and Wakeland soils, for example, formed in silty alluvium, and Sarpy and Zumbro soils formed in sandy alluvium. Because of flooding, many alluvial soils have layers of contrasting materials within their profiles. Dupo and Riley soils are examples. Slackwater sediments are included as stream alluvium but are deposited in slow-moving or still waters in lakes and sloughs. The soils in these areas typically have a higher clay content than that of the silty or sandy alluvial soils. Titus and Beaucoup soils formed in slackwater sediments. Valley-side alluvium is slopewash or local alluvium on footslopes and alluvial fans that is derived from erosion of adjacent sloping areas. The material is poorly sorted and stratified and reflects the character of the parent material directly upslope. The largest areas of valley-side alluvial deposits in Adams County are along the base of the Mississippi River bluffs. Other areas are throughout the county at the base of slopes along major streams and their tributaries. Drury, Littleton, and Worthen soils formed in valley-side alluvium. Pedisediment consists of sediments that accumulated on old erosion surfaces in the uplands and are now buried by loess deposits. Bunkum, Emery, and Passport soils formed in loess, pedisediment, and the underlying paleosol formed in glacial till.

Colluvium consists of deposits of rock fragments and soil material that have accumulated on very steep slopes as a result of gravitational action. Lacrescent soils formed in limestone colluvial deposits and occur along the Mississippi River bluffs and major streams and their tributaries in Adams County.

Eolian sand refers to windblown deposits of fine sand. These deposits contain very low percentages of sand coarser than fine sand and are poorly graded. Sparta soils formed in sandy deposits that were reworked by wind. They are on terraces of the

Mississippi River. Lamont soils also formed in sandy deposits. They are in steep and very steep areas near Siloam Springs State Park.

Cretaceous sediments are stratified marine deposits that are much older than the glacial deposits of Adams County. They are predominantly deposits of loose, unconsolidated sand and form a ridge running from near Mendon to the southeast corner of Adams County. Cretaceous sediments include a wide range of textures from sand to clay. El Dara soils are examples (fig. 3).

Bedrock residuum is the product of direct weathering of bedrock. Limestone and shale of the Mississippian and Pennsylvanian periods are the two major types of bedrock in Adams County (Willman and Frye, 1970). The largest areas of residuum near the land surface occur along the Mississippi River bluffs; along major tributaries, such as Bear Creek, Mill Creek, and McKee Creek; and in the southern part of Adams County, where outcrops of bedrock are common. Baylis and Crider soils formed in loess and the underlying limestone residuum. Goss soils formed in limestone residuum. Baylis and Goss soils contain cherty gravel. Marseilles soils formed in loess and shale residuum.

Climate

Adams County has a temperate, humid continental climate. Although climate has had an important overall influence on the characteristics of the soils, it is essentially uniform throughout the county and has not caused any major differences among the soils.

Climate has a very important effect on weathering, vegetation, and erosion. The weathering of minerals in the soil increases as temperature and rainfall increase.

Figure 3.—Gullies in an area of El Dara soils, which are typical of soils that formed in Cretaceous deposits.

As water moves downward, clay is moved from the surface soil to the subsoil, where it accumulates. The water also dissolves soluble salts and leaches them downward. Climate determines the kind and extent of plant and animal life on and in the soil. The climate in Adams County has favored prairie grasses and hardwood forests. Heavy rains can harm exposed soils that are used for crops. Spring rains and wind can cause extensive erosion of the surface if crop residue and trees are removed. More soil can be lost through erosion each year than is formed by natural processes.

Living Organisms

Soil development varies greatly depending on the type of vegetation in an area. One of the most easily recognized examples of the effect of vegetation on soil formation is the difference between prairie soils and forest soils. Under prairie conditions, grasses produce a fibrous root system within a few feet of the surface. As they die, these roots contribute to the total content of organic matter in the surface horizon. Plant material in the soil breaks down into humus, which retains the minerals, fertilizers, and water added to the soil. Osco, Biggsville, Timewell, Ipava, and Virden soils formed under prairie vegetation. These soils have a thick, black or dark brown surface layer. Soils that formed under forest vegetation have a lighter colored surface layer than soils that formed under grass. Forest vegetation produces less organic material than prairie vegetation, and the organic material accumulates at the surface. The humus that is produced is more acid than the humus in areas of grassland. These acids percolate into the soil and promote the breakdown of minerals. This process increases the rate of leaching and translocation, which reduces fertility and causes clay-sized particles to accumulate in lower layers. In areas where this process has been active for a long time, an eluvial horizon is produced. This horizon has a bleached or ashy appearance. Keomah, Menfro, Rozetta, Stookey, Timula, and Winfield soils formed under forest vegetation. Soils that formed under mixed forest and grassland vegetation are called transition soils. They are in areas that follow the present prairie-forest border. These soils have a moderately dark surface layer and a moderate content of organic matter. Mannon, Greenbush, and Clarksdale soils are examples.

Bacteria, fungi, and other micro-organisms help to break down the organic material and thus provide nutrients for plants and other soil organisms. The stability of soil aggregates is affected by microbial activity. Cellular excretions from these organisms help to bind soil particles together. Stable aggregates help to maintain soil porosity and a favorable water-air relationship in the soil. Earthworms, crayfish, insects, and burrowing animals incorporate organic material into the soil and help to maintain porosity.

Human activities, such as clearing of forests, cultivating, applying fertilizers, and draining, have increased the hazard of erosion in some areas in Adams County. In other areas, erosion has been controlled as a result of human activities. In some soils, fertility levels have increased. Soil structure has been altered as a result of tillage and compaction.

Relief and Drainage

Depositional and erosional forces have shaped the landscape in the survey area and created the landforms that are present today. The relief, or lay of the land, and the internal and overland drainage characteristics affect soil formation. In general, soil map unit boundaries follow landform and landform component boundaries. Slopes in the county range from 0 to 60 percent.

The shape and size of the landform play a role in the development of soils. The shape and slope of a landform affect the depth to the water table and influence natural drainage. In nearly level, poorly drained soils, such as Virden and Rushville soils, the water table is close to the surface for most of the year. The soil pores contain water, which restricts the circulation of air in the soil. Under these conditions, iron and manganese compounds are chemically reduced. As a result, the subsoil is dull gray and mottled. In areas of the more sloping, well drained Menfro soils, however, the water table is lower and some of the rainfall runs off the surface. The soil pores contain less water and more air. The iron and manganese compounds are well oxidized. As a result, the subsoil is brown and brightly colored.

Nearly level, poorly drained soils, such as Rushville soils, are less well developed than the gently sloping, well drained Menfro soils. Rushville soils have a high water table for part of the year. The wetness inhibits the removal of weathered material. In contrast, Menfro soils are deeper to a water table. As a result, weathered material is translocated downward to a greater extent than in the Rushville soils. The increased runoff rate also increases the hazard of erosion and further shapes the landscape. Soils that formed on the steeper slopes typically have been

subject to more erosion and less development than soils in less sloping areas.

Time

The length of time needed for the formation of a soil depends on the other factors of soil formation. Soils form more rapidly and are more acid if the content of lime in the parent material is low. Soil formation proceeds at a faster rate in rapidly permeable material than in slowly permeable material because lime and other soluble minerals are leached more quickly. Prairie soils form less quickly than forest soils because grasses are more efficient than trees in recycling calcium and other bases from the subsoil to the surface layer, and thus the loss of exchangeable bases by leaching and the development of soil acidity are slowed. Soils in a humid climate that supports good growth of vegetation develop more rapidly than those in a dry climate.

The length of time that the parent material has been in place determines, to a great extent, the degree of profile development. Blyton and Wakeland soils are on flood plains. They have a very weakly developed profile because they periodically receive new alluvial sediments. Although the parent material of Tice soils is similar to that of the Blyton and Wakeland soils, the sediments in the Tice soils are deposited slowly enough to allow stronger profile development. Menfro and Osco soils show intermediate profile development. They are in relatively stable upland areas where the parent material has been in place for a long time. On the more sloping parts of the landscape, erosion can remove the surface soil material at about the same rate as the rate of soil formation. Thus, soils in these areas, such Hickory, Lindley, and Timula soils, have weaker profile development even though the slopes have been exposed to weathering for thousands of years.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, mesic Typic Hapludalfs.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each soil series recognized in the survey area is described. Each series description is followed by descriptions of the associated detailed soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given in Part II of this survey.

A map unit delineation on the detailed soil maps represents an area on the landscape and consists of one or more soils or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components or areas that belong to other taxonomic classes.

Most map units include some areas with properties so similar to those of the dominant soil or soils in the map unit that they do not affect use and management. These areas are called similar soils. They may or may not be mentioned in the map unit description. Other soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called dissimilar components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The areas of dissimilar soils or miscellaneous areas are mentioned in the map unit descriptions. A few of these areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of these minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit. The principal hazards and limitations to be considered in planning for specific uses are described in Part II of this survey.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying layers, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on

the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Menfro silt loam, 2 to 5 percent slopes, is a phase of the Menfro series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Timewell and Ipava soils, 0 to 2 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The map unit Pits, quarries, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see Contents in Part II) give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Atlas Series

Taxonomic classification: Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs

Typical Pedon for MLRA 115C (Official Series Description)

Atlas silt loam, 5 to 10 percent slopes, eroded, at an elevation of 665 feet; 1,200 feet west and 50 feet south of the northeast corner of sec. 7, T. 1 N., R. 6 W.; USGS Coatsburg, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 39.9 seconds N. and long. 91 degrees 7 minutes 51.5 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common very fine and fine roots; common medium prominent brown (7.5YR 5/8) masses of iron accumulation throughout, few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

BE—7 to 13 inches; brown (10YR 5/3) silty clay loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure; friable; common fine roots; few fine distinct light brownish gray (10YR 6/2) clay depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; slightly acid; clear wavy boundary.

2Btg1—13 to 26 inches; dark gray (10YR 4/1) silty clay loam; moderate thick platy structure parting to weak fine subangular blocky; firm; common fine and few medium roots; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct white (10YR 8/1) masses of barite throughout; moderately acid; clear wavy boundary.

2Btg2—26 to 37 inches; 87 percent dark gray (10YR 4/1) and 10 percent gray (10YR 5/1) silty clay; weak medium prismatic structure; firm; common fine and medium roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct white (10YR 8/1) masses of barite throughout; 1 percent rounded gravel and 1 percent subangular limestone-cherty gravel; neutral; clear wavy boundary.

2Btg3—37 to 47 inches; gray (2.5Y 5/1) silty clay; weak coarse prismatic structure; firm; common fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout and few fine faint gray (10YR 6/1) iron depletions and few fine distinct white (10YR 8/1) masses of barite throughout; 1 percent angular gravel; neutral; clear wavy boundary.

2Btg4—47 to 61 inches; gray (2.5Y 5/1) clay loam; weak coarse prismatic structure; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation and few fine distinct white (10YR 8/1) barite crystals throughout; 1 percent limestone-cherty gravel and

1 percent rounded igneous-granite gravel; neutral; clear wavy boundary.

2BCg—61 to 80 inches; light brownish gray (2.5Y 6/2) clay loam; weak coarse prismatic structure; firm; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation throughout; 2 percent limestone-cherty gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the loess: 0 to 20 inches
Depth to base of diagnostic horizon: More than 42 inches
Slope range: 5 to 10 percent

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—silt loam, loam, silty clay loam, or clay loam

E or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 4
Texture—silt loam or silty clay loam

Bt, Btg, or 2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 3
Texture—clay loam, clay, silty clay loam, or silty clay
Content of rock fragments—0 to 5 percent

2Cg horizon (if it occurs):
Hue—10YR, 7.5YR, 5Y, or N
Value—4 to 6
Chroma—0 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—2 to 15 percent

7C2—Atlas silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Atlas and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Keller soils, which have less clay in the upper part of the subsoil than the Atlas soil and have a darker surface layer
- Passport soils, which have less clay in the upper part of the subsoil than the Atlas soil; in areas upslope from the Atlas soil
- Severely eroded soils that have more clay in the surface layer than the Atlas soil

Dissimilar soils:
- Fishhook soils, which have less clay in the upper part of the subsoil than the Atlas soil; in areas upslope from the Atlas soil
- Rozetta soils, which have less clay in the subsoil than the Atlas soil; in areas upslope from the Atlas soil
- The well drained Ursa soils
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

7C3—Atlas silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Paleosol formed in glacial till
Special feature: The Atlas soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Atlas and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Keller soils, which have less clay in the subsoil than the Atlas soil and have a darker surface layer
• Passport soils, which have less clay in the upper part of the subsoil than the Atlas soil; in areas upslope from the Atlas soil
• Moderately eroded soils that have less clay in the surface layer than the Atlas soil

Dissimilar soils:
• Fishhook soils, which have less clay in the upper part of the subsoil than the Atlas soil; in areas upslope from the Atlas soil
• Rozetta soils, which have less clay in the subsoil than the Atlas soil; in areas upslope from the Atlas soil
• The well drained Ursa soils
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Baylis Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Paleudalfs

Typical Pedon for MLRA 115C (Official Series Description)

Baylis silt loam, 18 to 25 percent slopes, eroded, at an elevation of 610 feet; 100 feet west and 1,750 feet north of the southeast corner of sec. 17, T. 4 S., R. 6 W.; USGS Barry, Illinois, topographic quadrangle; lat. 39 degrees 43 minutes 4.1 seconds N. and long. 91 degrees 6 minutes 25.5 seconds W., NAD 27:

Ap—0 to 7 inches; dark yellowish brown (10YR 4/4) silt loam, brown (10YR 5/3) dry; moderate medium granular structure; friable; many fine and medium roots throughout; many medium moderate-continuity tubular pores; moderately acid; abrupt smooth boundary.

Bt1—7 to 16 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine subangular blocky structure; firm; many fine and medium roots between peds; many fine and medium moderate-continuity tubular pores; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear wavy boundary.

Bt2—16 to 24 inches; brown (7.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common medium and coarse roots between peds; common medium and coarse moderate-continuity tubular pores; many faint dark brown (7.5YR 3/4) clay films on faces of peds; few fine distinct black (10YR 2/1) masses of iron and manganese accumulation lining root channels and pores; strongly acid; clear wavy boundary.

2Bt3—24 to 42 inches; yellowish red (5YR 4/6) silty clay loam; moderate coarse subangular blocky structure; firm; few coarse roots throughout; few coarse moderate-continuity tubular pores; many distinct reddish brown (5YR 4/4) and dark brown (7.5YR 3/4) clay films on faces of peds; common fine and medium faint dark red (2.5YR 3/6) masses of iron and manganese accumulation between peds and common fine and medium prominent black (5YR 2/1) masses of iron and manganese accumulation lining root channels and pores; 10 percent cherty gravel; strongly acid; gradual wavy boundary.

2Bt4—42 to 60 inches; yellowish red (5YR 4/6) gravelly silty clay loam; moderate coarse subangular blocky structure; very firm; few coarse roots throughout; few coarse tubular moderate-continuity pores; common distinct reddish brown (5YR 4/4) and dark brown (7.5YR 3/4) clay films on faces of peds; common fine and medium faint dark red (2.5YR 3/6) masses of iron and manganese accumulation and prominent black (5YR 2/1) masses of iron and manganese accumulation throughout; 20 percent cherty gravel; moderately acid; clear wavy boundary.

2Bt5—60 to 80 inches; yellowish red (5YR 5/6) extremely gravelly clay; massive; very firm; common distinct dark brown (7.5YR 3/4) and reddish brown (5YR 4/4) clay films on rock fragments; common fine and medium distinct dark red (2.5YR 3/6) masses of iron and manganese accumulation and prominent black (5YR 2/1) masses of iron and manganese accumulation throughout; 70 percent cherty gravel; strongly acid.

MLRA Series Range in Characteristics

Thickness of the loess: 20 to 40 inches

Depth to lithic or paralithic contact: More than 60 inches
Depth to base of diagnostic horizon: More than 60 inches
Slope range: 5 to 25 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

2Bt horizon:
Hue—10YR, 2.5YR, 5YR, or 7.5YR
Value—4 to 6
Chroma—4 to 6
Texture—silty clay loam, clay loam, silty clay, or clay
Content of rock fragments—10 to 90 percent

472C2—Baylis silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess and the underlying limestone residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Baylis and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have more clay in the surface layer than the Baylis soil
• Soils that have chert fragments on the surface

Dissimilar soils:
• Goss soils, which have more clay and rock fragments in the upper part of the subsoil than the Baylis soil; in areas downslope from the Baylis soil
• Menfro soils, which have less clay in the lower part of the subsoil than the Baylis soil; in areas upslope from the Baylis soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

472D2—Baylis silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess and the underlying limestone residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Baylis and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have more clay in the surface layer than the Baylis soil
• Soils that have chert fragments on the surface

Dissimilar soils:
• Marseilles soils, which formed in shale; in areas upslope from the Baylis soil
• Goss soils, which have more clay and rock fragments in the upper part of the subsoil than the Baylis soil; in areas downslope from the Baylis soil
• Lacrescent soils, which have less clay in the subsoil than the Baylis soil and have a dark surface soil; in areas downslope from the Baylis soil

• Soils that have outcrops of limestone bedrock on the surface
• Menfro soils, which have less clay in the lower part of the subsoil than the Baylis soil; in areas upslope from the Baylis soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

472E2—Baylis silt loam, 18 to 25 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess and the underlying limestone residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Baylis and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have more clay in the surface layer than the Baylis soil
• Soils that have chert fragments on the surface

Dissimilar soils:
• Marseilles soils, which formed in shale; in areas upslope from the Baylis soil
• Goss soils, which have more clay and rock fragments in the upper part of the subsoil than the Baylis soil; in areas downslope from the Baylis soil
• Lacrescent soils, which have less clay in the subsoil than the Baylis soil and have a dark surface soil; in areas downslope from the Baylis soil
• Soils that have outcrops of limestone bedrock on the surface
• Menfro soils, which have less clay in the lower part of the subsoil than the Baylis soil; in areas upslope from the Baylis soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Beaucoup Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon for MLRA 115C (Official Series Description)

Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 480 feet; 727 feet south and 2,577 feet west of the northeast corner of sec. 9, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 39 seconds N. and long. 91 degrees 27 minutes 2 seconds W., NAD 27:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common fine roots; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation between peds; neutral; gradual smooth boundary.

A—6 to 15 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine distinct dark yellowish brown (10YR 3/4) masses of iron accumulation between peds; neutral; gradual smooth boundary.

Bg1—15 to 24 inches; dark gray (10YR 4/1) silty clay loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg2—24 to 35 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; very few faint dark gray (5Y 4/1) clay films in root channels and/or pores; common fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, few fine prominent strong brown (7.5YR 4/6) masses of

iron and manganese accumulation throughout, and few fine prominent dark brown (7.5YR 3/4) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Bg3—35 to 48 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; very few faint dark gray (5Y 4/1) clay films in root channels and/or pores; few fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, few fine prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation throughout, and few fine dark brown (7.5YR 3/4) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

BCg—48 to 60 inches; gray (5Y 5/1), stratified silt loam and silty clay loam; weak medium prismatic structure; friable; very few faint dark gray (5Y 4/1) clay films in root channels and/or pores; common fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, few fine prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation throughout, and few fine dark brown (7.5YR 3/4) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Cg1—60 to 70 inches; dark gray (10YR 4/1), stratified silt loam and silty clay loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Cg2—70 to 80 inches; dark gray (10YR 4/1), stratified silt loam and silty clay loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates (if they occur): More than 40 inches
Depth to base of diagnostic horizon: 35 to 65 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam or silt loam

Bg or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—stratified silty clay loam, silt loam, loam, sandy loam, fine sandy loam, or very fine sandy loam

1070L—Beaucoup silty clay loam, 0 to 2 percent slopes, undrained, occasionally flooded, long duration

Setting

Landform: Flood plains
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Very poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Beaucoup and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that are frequently flooded

Dissimilar soils:
- Drained areas of Beaucoup soils
- Tice soils, which are somewhat poorly drained; in the slightly higher positions on the landform
- Wakeland soils, which have a lighter colored surface soil than that of the Beaucoup soil and have less clay throughout the profile; in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Beaucoup and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Gorham soils, which have more sand in the underlying material than the Beaucoup soil
- Soils that have silty overwash on the surface
- Soils that have a thicker or thinner dark surface soil than that of the Beaucoup soil
- Soils that have more sand in the surface layer than the Beaucoup soil
- Titus soils, which have more clay in the upper part than the Beaucoup soil

Dissimilar soils:
- The somewhat poorly drained Lawson soils, which have less clay in the upper part than the Beaucoup soil; in the slightly higher positions on the landform
- The somewhat poorly drained Riley soils, which have more sand throughout than the Beaucoup soil; in the slightly higher positions on the landform
- Soils that are undrained
- The somewhat poorly drained Tice soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Bethalto Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 115C

Bethalto silt loam, 0 to 2 percent slopes, at an elevation of 715 feet; 2,075 feet south and 525 feet west of the northeast corner of sec. 2, T. 1 N., R. 8 W.; USGS Mendon, Illinois, topographic quadrangle; lat. 40 degrees 6 minutes 13 seconds N. and long. 91 degrees 16 minutes 53 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak thick platy structure parting to moderate fine subangular blocky; friable; common very fine roots throughout; neutral; abrupt smooth boundary.

Eg—8 to 14 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to moderate fine and medium subangular blocky; friable; few very fine roots throughout; common distinct very dark gray (10YR 3/1) organic coats on faces of peds; few fine distinct brown (7.5YR 4/3) masses of iron accumulation and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; neutral; abrupt smooth boundary.

Bt1—14 to 20 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores and many prominent dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; clear smooth boundary.

Bt2—20 to 29 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores and many prominent dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bt3—29 to 38 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; few prominent very dark gray (10YR 3/1) organic coats in root channels and/or pores and common distinct grayish brown (10YR 5/2) clay films on faces of peds; many fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and many fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual smooth boundary.

BC1—38 to 47 inches; brown (10YR 5/3) silty clay loam; weak coarse subangular blocky structure; friable; common prominent very dark gray (10YR 3/1) organic coats in root channels and/or pores; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and many fine faint light brownish gray (10YR 6/2) iron depletions throughout; slightly acid; gradual smooth boundary.

BC2—47 to 63 inches; 35 percent light brownish gray (10YR 6/2), 35 percent strong brown (7.5YR 5/6), and 30 percent brown (10YR 5/3) silt loam; weak coarse subangular blocky structure; friable; common prominent very dark gray (10YR 3/1) organic coats in root channels and/or pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; neutral; gradual smooth boundary.

C—63 to 80 inches; 35 percent light brownish gray (10YR 6/2), 35 percent strong brown (7.5YR 5/6), and 30 percent brown (10YR 5/3) silt loam; massive; friable; few prominent very dark gray (10YR 3/1) organic coats in root channels and/or pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; neutral.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 42 to 80 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E or Eg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture—silt loam

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silt loam

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

90A—Bethalto silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bethalto and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Caseyville soils, which have a lighter colored surface layer than that of the Bethalto soil
- Clarksdale soils, which have more clay in the subsoil than the Bethalto soil
- Edwardsville soils, which have a thicker dark surface layer than that of the Bethalto soil

Dissimilar soils:
- Soils that are poorly drained

Management

For general and detailed information about

managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

90B—Bethalto silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Bethalto soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bethalto and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Caseyville soils, which have a lighter colored surface layer than that of the Bethalto soil
- Clarksdale soils, which have more clay in the subsoil than the Bethalto soil
- Edwardsville soils, which have a thicker dark surface layer than that of the Bethalto soil
- Emery soils, which have more sand in the underlying material than the Bethalto soil; in areas downslope from the Bethalto soil

Dissimilar soils:
- The moderately well drained Downsouth soils in the slightly higher positions on the landform
- Fishhook soils, which have a lighter colored surface soil than that of the Bethalto soil and have more clay in the lower part of the subsoil; in areas downslope from the Bethalto soil
- Keller soils, which have more clay in the lower part of the subsoil than the Bethalto soil; in areas downslope from the Bethalto soil
- The well drained Wakenda soils, which have a thicker dark surface soil than that of the Bethalto soil; in the slightly higher positions on the landform
- The moderately well drained Winfield soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Biggsville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludolls

Typical Pedon for MLRA 115C

Biggsville silt loam, 0 to 2 percent slopes, at an elevation of 632 feet; 2,300 feet west and 2,350 feet north of the southeast corner of sec. 31, T. 1 N., R. 8 W.; USGS Mendon, Illinois, topographic quadrangle; lat. 40 degrees 1 minute 48 seconds N. and long. 91 degrees 22 minutes 5 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many very fine and fine roots; slightly alkaline; clear smooth boundary.

A—7 to 13 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; common very fine and fine roots; neutral; clear smooth boundary.

BA—13 to 22 inches; dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; many distinct very dark gray (10YR 3/1) organic coats on faces of peds; neutral; clear smooth boundary.

Bt1—22 to 31 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure parting to moderate fine subangular blocky; friable; few fine roots; common distinct brown (10YR 4/3) clay films and few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Bt2—31 to 41 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct brown

(10YR 4/3) clay films on faces of peds; common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation and few fine faint brown (7.5YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bt3—41 to 53 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, common fine distinct strong brown (7.5YR 4/6) masses of iron accumulation throughout, and common fine faint light brownish gray (10YR 6/2) iron depletions between peds; slightly acid; clear smooth boundary.

C—53 to 64 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct brown (10YR 4/3) clay films in root channels and/or pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, many fine and medium distinct strong brown (7.5YR 4/6) masses of iron accumulation throughout, and common fine faint light brownish gray (10YR 6/2) iron depletions between peds; slightly acid; clear smooth boundary.

Cg—64 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few prominent very dark grayish brown (10YR 3/2) clay films in root channels and/or pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to base of diagnostic horizon: More than 42 inches
Slope range: 0 to 7 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bw or Bt horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam

C or Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

671A—Biggsville silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Biggsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Mannon soils, which have a thinner dark surface soil than that of the Biggsville soil
• Soils that have a seasonal high water table at a depth of more than 60 inches
• Soils that have more clay in the subsoil than the Biggsville soil

Dissimilar soils:
• Somewhat poorly drained soils in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

671B—Biggsville silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Biggsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Mannon soils, which have a thinner dark surface soil than that of the Biggsville soil
- Soils that have a seasonal high water table at a depth of more than 60 inches
- Wakenda soils, which have more clay in the subsoil than the Biggsville soil

Dissimilar soils:
- Somewhat poorly drained soils in the lower, less sloping positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

829B—Biggsville-Mannon silt loams, 1 to 7 percent slopes

Setting

Landform: Interfluves
Position on the landform: Biggsville—broad summits; Mannon—summits and head slopes
Special features: These soils occur on upland landscapes in areas of urban development in or near Quincy. They are used as sites for buildings, streets, sidewalks, and other structures.

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Biggsville and similar soils: 45 percent
Mannon and similar soils: 45 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately intermingled that mapping them separately was not practical.

Similar soils:
- Soils that have slopes of more than 7 percent
- Stookey soils, which have a lighter colored surface layer

Dissimilar soils:
- Orthents in areas where the soils have been disturbed
- Somewhat poorly drained soils in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Blake Series

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Aquic Udifluvents

Typical Pedon for MLRA 115C

Blake silt loam, in an area of Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration, at an elevation of 465 feet; 490 feet west and 40 feet north of the southeast corner of sec. 16, T. 2 S., R. 9 W.; USGS Quincy West, Illinois, topographic quadrangle; lat. 39 degrees 23 minutes 32 seconds N. and 91 degrees 26 minutes 5 seconds W., NAD 27:

AC—0 to 6 inches; stratified, 85 percent very dark grayish brown (10YR 3/2) and 15 percent brown (10YR 5/3) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; strongly effervescent; slightly alkaline; clear smooth boundary.

C1—6 to 14 inches; stratified, 95 percent very dark grayish brown (10YR 3/2) and 5 percent brown (10YR 5/3) silt loam; weak thick platy structure parting to moderate fine subangular blocky; friable;

common very fine and fine roots; very slightly effervescent; slightly alkaline; clear smooth boundary.

C2—14 to 31 inches; stratified, 78 percent dark grayish brown (10YR 4/2) and 20 percent light olive brown (2.5Y 5/3) silt loam; weak thick platy structure parting to moderate fine subangular blocky; friable; common very fine and fine roots; few faint very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine faint grayish brown (10YR 5/2) iron depletions throughout (the yellowish brown accumulations occur below a depth of 20 inches); very slightly effervescent; slightly alkaline; clear smooth boundary.

C3—31 to 60 inches; stratified, 70 percent very dark grayish brown (10YR 3/2) and 24 percent light olive brown (2.5Y 5/3) silt loam; weak thick platy structure parting to moderate fine subangular blocky; friable; common very fine roots; few faint very dark gray (10YR 3/1) organic coats in root channels and/or pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint gray (10YR 5/1) iron depletions throughout; slightly effervescent; slightly alkaline.

MLRA Series Range in Characteristics

Depth to carbonates: 0 to 10 inches
Depth to base of diagnostic horizon: Less than 10 inches
Slope range: 0 to 2 percent

AC, Ap, or A horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 or 2
Texture—silty clay loam or silt loam

C horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 4
Texture—silt loam, silty clay loam, loam, or very fine sandy loam

3877L—Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Blake—rises; Slacwater—flood plains
Position on the landform: Blake—summits; Slacwater—low-lying areas
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Blake—somewhat poorly drained; Slacwater—poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Blake and similar soils: 45 percent
Slacwater and similar soils: 45 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately intermingled that mapping them separately was not practical.

Similar soils:
- Raveenwash soils, which have a lighter colored surface soil and have more sand and less clay throughout the profile; in positions adjacent to the stream channel
- Soils that are not stratified in the surface layer
- Soils that are in the slightly higher positions and are subject to occasional flooding
- Soils that have more clay in the upper part
- Soils that have more sand in the underlying material

Dissimilar soils:
- Soils that are moderately well drained
- Soils that do not have carbonates

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Blyton Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Oxyaquic Udifluvents

Typical Pedon for MLRA 115C (Official Series Description)

Blyton silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 515 feet; 1,520 feet east and 1,400 feet south of the northwest corner of sec. 3, T. 5 N., R. 3 E.; USGS Lewistown, Illinois, topographic

quadrangle; lat. 40 degrees 26 minutes 57 seconds N. and long. 90 degrees 9 minutes 24 seconds W., NAD 27:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure; very friable; many very fine roots; neutral; abrupt smooth boundary.

C1—10 to 23 inches; 55 percent brown (10YR 4/3) and 40 percent brown (10YR 5/3) silt loam; massive with thin bedding planes; very friable; many very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; abrupt smooth boundary.

C2—23 to 26 inches; brown (10YR 4/3) silt loam; massive with thin bedding planes; very friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation throughout and common fine faint grayish brown (10YR 5/2) iron depletions along pores; neutral; clear smooth boundary.

C3—26 to 80 inches; brown (10YR 4/3) silt loam; massive with thin bedding planes; very friable; common fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, common fine faint grayish brown (10YR 5/2) iron depletions along pores, and light brownish gray (10YR 6/2) iron depletions along pores; neutral.

MLRA Series Range in Characteristics

Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

C or Cg horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or loam

3634A—Blyton silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Blyton and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The well drained Haymond soils
- The well drained Wirt soils, which have more sand throughout than the Blyton soil

Dissimilar soils:
- The well drained Drury soils, which have more clay in the upper part than the Blyton soil; in the higher positions on footslopes
- Elsah soils, which have rock fragments throughout
- Soils that have carbonates throughout
- The poorly drained Twomile soils, which have more clay in the upper part than the Blyton soil; in the higher positions on the landform
- The somewhat poorly drained Wakeland soils in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

8634A—Blyton silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Alluvium

Additional information specific to this map unit, such

as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Blyton and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The well drained Haymond soils in the slightly higher positions on the landform
- Soils that have a buried soil at a depth of 20 to 40 inches

Dissimilar soils:
- The poorly drained Beaucoup soils, which have a darker surface soil than that of the Blyton soil and have more clay in the upper part of the profile; in the lower positions on the landform
- The somewhat poorly drained Lawson soils, which have a darker surface soil than that of the Blyton soil and have more clay in the upper part of the profile; in the slightly lower positions on the landform
- Soils that have more sand throughout than the Blyton soil
- The somewhat poorly drained Wakeland soils in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Bunkum Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon for MLRA 115C

Bunkum silt loam, 5 to 10 percent slopes, eroded, at an elevation of 660 feet; 2,360 feet south and 2,440 feet west of the northeast corner of sec. 23, T. 2 S., R. 8 W.; USGS Quincy East, Illinois, topographic quadrangle; lat. 39 degrees 53 minutes 2 seconds N. and long. 91 degrees 17 minutes 30.5 seconds W., NAD 27:

Ap—0 to 4 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak thick platy structure parting to weak fine subangular blocky; friable; common fine and medium roots throughout; few fine distinct black (2.5Y 2/1) iron and manganese concretions and few fine distinct light gray (10YR 7/2) clay depletions throughout; neutral; abrupt smooth boundary.

AE—4 to 7 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; weak medium subangular blocky structure; friable; common fine roots throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

Bt1—7 to 10 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; few fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct black (2.5Y 2/1) iron and manganese concretions throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation between peds, and few fine distinct light brownish gray (10YR 6/2) iron depletions between peds; moderately acid; clear smooth boundary.

Bt2—10 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few fine roots throughout; common distinct brown (10YR 4/3) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common medium distinct light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bt3—22 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; friable; few fine roots throughout; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many medium faint brown (10YR 5/3) masses of iron accumulation throughout, common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, many medium distinct light brownish gray (10YR 6/2) iron depletions throughout, and common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout; strongly acid; gradual wavy boundary.

BCt—34 to 50 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure; friable; few fine roots throughout; very few faint dark yellowish brown (10YR 4/4) clay films in root channels and/or pores; common medium faint brown (10YR 5/3) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and

manganese accumulation between peds, few medium distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout, and many medium distinct light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

2C1—50 to 65 inches; pale brown (10YR 6/3) silt loam; massive; friable; few fine roots between peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common medium faint brown (10YR 5/3) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and many medium faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear wavy boundary.

2C2—65 to 78 inches; pale brown (10YR 6/3) silt loam; massive; friable; few fine roots between peds; many coarse faint yellowish brown (10YR 5/4) masses of iron accumulation throughout, few medium yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and many coarse faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

2C3—78 to 85 inches; yellowish brown (10YR 5/4) silt loam; massive; firm; common fine and medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, few coarse distinct light brownish gray (10YR 6/2) iron depletions throughout, and common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout; moderately acid.

MLRA Series Range in Characteristics

Thickness of the loess: 24 to 60 inches
Depth to base of diagnostic horizon: 24 to 60 inches
Slope range: 2 to 18 percent

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or silt loam

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

515B2—Bunkum silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bunkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Emery soils, which have a darker surface layer than that of the Bunkum soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Bunkum soil
- Keomah soils, which have less sand in the underlying material than the Bunkum soil; in areas upslope from the Bunkum soil
- Soils on terraces
- Soils that are moderately well drained

Dissimilar soils:
- Winfield and Rozetta soils, which are better drained than the Bunkum soil and have less sand in the lower part of the subsoil; in areas upslope from the Bunkum soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

515C2—Bunkum silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bunkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Emery soils, which have a darker surface layer than that of the Bunkum soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Bunkum soil
- Keomah soils, which have less sand in the underlying material than the Bunkum soil; in areas upslope from the Bunkum soil
- Passport soils, which have more sand in the upper part of the subsoil than the Bunkum soil
- Soils on terraces
- Soils that are moderately well drained

Dissimilar soils:
- The moderately well drained Keswick soils, which have more clay in the subsoil than the Bunkum soil; in areas downslope from the Bunkum soil
- Winfield and Rozetta soils, which are better drained than the Bunkum soil and have less sand in the lower part of the subsoil; in areas upslope from the Bunkum soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

515C3—Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment
Special feature: The Bunkum soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bunkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Emery soils, which have a darker surface layer than that of the Bunkum soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Bunkum soil
- Keomah soils, which have less sand in the underlying material than the Bunkum soil; in areas upslope from the Bunkum soil
- Passport soils, which have more sand in the upper part of the subsoil than the Bunkum soil
- Soils on terraces
- Soils that are moderately well drained

Dissimilar soils:
- The moderately well drained Keswick soils, which have more clay in the subsoil than the Bunkum soil; in areas downslope from the Bunkum soil
- Winfield and Rozetta soils, which are better drained than the Bunkum soil and have less sand in the lower part of the subsoil; in areas upslope from the Bunkum soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section

- “Engineering” section
- “Soil Properties” section

515D2—Bunkum silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bunkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- El Dara soils, which formed in loamy Cretaceous material; in areas downslope from the Bunkum soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Bunkum soil
- Passport soils, which have more sand in the upper part of the subsoil than the Bunkum soil
- Soils on terraces
- Soils that are moderately well drained

Dissimilar soils:
- The moderately well drained Keswick soils, which have more clay in the subsoil than the Bunkum soil; in areas downslope from the Bunkum soil
- Winfield and Rozetta soils, which are better drained than the Bunkum soil and have less sand in the lower part of the subsoil; in areas upslope from the Bunkum soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

515D3—Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment
Special feature: The Bunkum soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Bunkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- El Dara soils, which formed in loamy Cretaceous material; in areas downslope from the Bunkum soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Bunkum soil
- Passport soils, which have more sand in the upper part of the subsoil than the Bunkum soil
- Soils on terraces
- Soils that are moderately well drained

Dissimilar soils:
- The moderately well drained Keswick soils, which have more clay in the subsoil than the Bunkum soil; in areas downslope from the Bunkum soil
- Winfield and Rozetta soils, which are better drained than the Bunkum soil and have less sand in the lower part of the subsoil; in areas upslope from the Bunkum soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Caseyville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Taxadjunct features: The Caseyville soils in this survey area are browner in the upper part of the subsoil than is defined as the range for the series. This difference, however, does not significantly affect the use or behavior of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Aquic Hapludalfs.

Typical Pedon for MLRA 115C

Caseyville silt loam, 0 to 2 percent slopes, at an elevation of 715 feet; 320 feet east and 160 feet north of the southwest corner of sec. 36, T. 7 S., R. 3 W.; USGS Pearl West, Illinois, topographic quadrangle; lat. 39 degrees 23 minutes 58 seconds N. and long. 90 degrees 42 minutes 20 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; few fine roots throughout; strongly acid; abrupt smooth boundary.

E—9 to 16 inches; pale brown (10YR 6/3) silt loam; weak thin platy structure; friable; few fine roots throughout; few fine faint grayish brown (10YR 5/2) iron depletions throughout and few medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; very strongly acid; clear smooth boundary.

Bt1—16 to 22 inches; brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; firm; very few fine roots throughout; few distinct brown (10YR 4/3) and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions throughout, few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, and few fine and medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; very strongly acid; clear smooth boundary.

Bt2—22 to 36 inches; brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; firm; very few fine roots throughout; few distinct brown (10YR 4/3) and dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint light brownish gray (10YR 6/2) iron depletions throughout, common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and few medium distinct black (2.5Y 2/1) masses of manganese accumulation throughout; very strongly acid; clear smooth boundary.

Btg—36 to 43 inches; grayish brown (10YR 5/2) silty clay loam; weak medium subangular blocky structure; firm; very few fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; common medium faint light brownish gray (10YR 6/2) iron depletions throughout, common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and few medium distinct black (2.5Y 2/1) masses of manganese accumulation throughout; strongly acid; gradual smooth boundary.

BCg—43 to 50 inches; 60 percent light brownish gray (10YR 6/2) and 40 percent yellowish brown (10YR 5/6) silt loam; weak coarse subangular blocky structure; friable; few medium distinct black (2.5Y 2/1) masses of manganese accumulation throughout; moderately acid; gradual smooth boundary.

Cg—50 to 60 inches; 60 percent light brownish gray (10YR 6/2) and 40 percent yellowish brown (10YR 5/6) silt loam; massive; friable; few medium distinct black (2.5Y 2/1) masses of manganese accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 40 to 76 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—3 to 6
Chroma—1 or 2
Texture—silt loam

E or Eg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture—silt loam

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or silt loam

Cg or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

267A—Caseyville silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Caseyville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bethalto soils, which have a darker surface layer than that of the Caseyville soil
• Soils that have less clay in the subsoil than the Caseyville soil

Dissimilar soils:
• The moderately well drained Downsouth soils, which have a darker surface layer than that of the Caseyville soil; in the slightly higher positions on the landform
• The poorly drained Rushville soils, which have more clay in the subsoil than the Caseyville soil; in the lower positions on the landform
• The moderately well drained Winfield soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

267B—Caseyville silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Caseyville soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Caseyville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bethalto soils, which have a darker surface layer than that of the Caseyville soil
• Bunkum soils, which have more sand in the lower part of the subsoil than the Caseyville soil; in areas downslope from the Caseyville soil
• Soils that have less clay in the subsoil than the Caseyville soil

Dissimilar soils:
• The moderately well drained Downsouth soils, which have a darker surface layer than that of the Caseyville soil; in the slightly higher positions on the landform
• The moderately well drained Winfield soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Clarksdale Series

Taxonomic classification: Fine, smectitic, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 115C

Clarksdale silt loam, 0 to 2 percent slopes, at an elevation of 650 feet; 800 feet south and 550 feet east of the northwest corner of sec. 16, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; lat. 40 degrees 9 minutes 55.1 seconds N. and long. 91 degrees 13 minutes 18 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots throughout; neutral; abrupt smooth boundary.

E—8 to 12 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium platy structure parting to weak very fine subangular blocky; friable; common very fine and fine roots throughout; many faint very dark grayish brown (10YR 3/2) organic coats on faces of peds and in pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation lining root channels and/or pores, few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and many fine distinct light gray (10YR 7/1 and 7/2) clay depletions between peds; neutral; clear smooth boundary.

BE—12 to 16 inches; grayish brown (10YR 5/2) silt loam; moderate fine subangular blocky structure; friable; few fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine faint light gray (10YR 7/1) clay depletions between peds; moderately acid; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots throughout; many prominent dark grayish brown (10YR 4/2) clay films on faces of peds and many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bt2—23 to 31 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; many faint grayish brown (10YR 5/2) clay films on faces of peds and many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout, common fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

Btg1—31 to 47 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; few fine roots throughout; common prominent grayish brown (10YR 5/2) clay films on faces of peds and many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine faint light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; neutral; gradual wavy boundary.

Btg2—47 to 57 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; firm; few fine roots throughout; common prominent dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; neutral; clear wavy boundary.

BCg—57 to 67 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse subangular blocky structure; firm; common prominent dark grayish brown (10YR 4/2) clay films in root channels and/or pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and common medium prominent yellowish red (5YR 5/6) masses of iron accumulation throughout; neutral; clear wavy boundary.

Cg—67 to 80 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium prominent yellowish red (5YR 4/6) masses of iron accumulation and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 40 inches
Depth to base of diagnostic horizon: 40 to 60 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3

Chroma—1 or 2
Texture—silt loam

E or BE horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, silty clay, or silt loam

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam

257A—Clarksdale silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Clarksdale and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bethalto soils, which have less clay in the subsoil than the Clarksdale soil
• Keomah soils, which have a lighter colored surface layer than the Clarksdale soil
• Soils on terraces
• Timewell and Ipava soils, which have a thicker dark surface soil than that of the Clarksdale soil

Dissimilar soils:
• The poorly drained Rubio soils in the slightly lower positions on the landform
• The poorly drained Virden soils, which have a thicker dark surface soil than that of the Clarksdale soil and do not have a gray subsurface layer; in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

257B—Clarksdale silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Clarksdale soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Clarksdale and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bethalto soils, which have less clay in the subsoil than the Clarksdale soil
• Bunkum soils, which have more sand in the lower part of the subsoil than the Clarksdale soil and have a lighter colored surface layer; in areas downslope from the Clarksdale soil
• Greenbush and Downsouth soils, which have less clay in the subsoil than the Clarksdale soil; on the higher summits
• Emery soils, which have more sand in the lower part of the subsoil than the Clarksdale soil; in areas downslope from the Clarksdale soil
• Keomah soils, which have a lighter colored surface layer than that of the Clarksdale soil
• Osco and Wakenda soils, which have less clay in the subsoil than the Clarksdale soil and have a thicker dark surface soil; on the higher summits

Dissimilar soils:
• Fishhook soils, which have more clay in the lower

part of the subsoil than the Clarksdale soil and have a lighter colored surface layer; in areas downslope from the Clarksdale soil
• Keller soils, which have more clay in the lower part of the subsoil than the Clarksdale soil; in areas downslope from the Clarksdale soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Coatsburg Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon for MLRA 115C (Official Series Description)

Coatsburg silt loam, 5 to 10 percent slopes, eroded, at an elevation of 705 feet; 2,550 feet east and 2,400 feet north of the southwest corner of sec. 20, T. 2 N., R. 5 W.; USGS Augusta, Illinois, topographic quadrangle; lat. 40 degrees 8 minutes 31.1 seconds N. and long. 91 degrees 7 minutes 25.4 seconds W., NAD 27:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine and medium roots; moderately acid; abrupt smooth boundary.

AB—6 to 10 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium subangular blocky structure parting to moderate fine subangular blocky; firm; common fine roots; many fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation throughout, common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout, and few fine light gray (10YR 7/1) clay depletions on faces of peds; moderately acid; clear wavy boundary.

2Btg1—10 to 14 inches; dark grayish brown (10YR 4/2) silty clay loam; weak medium subangular blocky structure; firm; few fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark gray (10YR 4/1) clay films on faces of peds; many fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; moderately acid; clear wavy boundary.

2Btg2—14 to 19 inches; grayish brown (10YR 5/2) silty clay; weak coarse prismatic structure parting to weak medium subangular blocky; firm; few fine roots; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear wavy boundary.

2Btg3—19 to 26 inches; grayish brown (10YR 5/2) silty clay loam; weak very coarse prismatic structure; firm; few fine roots; common distinct gray (10YR 5/1) clay films and few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine faint light brownish gray (10YR 6/2) iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; moderately acid; clear wavy boundary.

2Btg4—26 to 38 inches; grayish brown (10YR 5/2) silty clay loam; weak very coarse prismatic structure; firm; few very fine roots; few distinct gray (10YR 5/1) clay films on faces of peds and in pores; many fine and medium faint light brownish gray (10YR 6/2) iron depletions throughout, common fine and medium prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; moderately acid; clear wavy boundary.

2Btg5—38 to 45 inches; light brownish gray (10YR 6/2) silty clay loam; moderate very coarse prismatic structure; firm; common faint grayish brown (10YR 5/2) clay films on faces of peds and few distinct dark gray (10YR 4/1) clay films lining root channels and pores; common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation and common fine faint light gray (10YR 7/2) clay depletions throughout; slightly acid; clear wavy boundary.

2Btg6—45 to 62 inches; gray (10YR 6/1) silty clay loam; moderate very coarse prismatic structure; firm; common distinct gray (10YR 5/1) clay films on faces of peds; many fine faint light gray (10YR 7/2) clay depletions on faces of peds, common medium and coarse prominent brownish yellow (10YR 6/6) masses of iron accumulation throughout, and few medium prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; clear wavy boundary.

2Btg7—62 to 70 inches; light brownish gray (10YR 6/2) silty clay; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few distinct gray (10YR 6/1) clay films in root channels and/or pores; many medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and common fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; gradual wavy boundary.

2BCg—70 to 80 inches; gray (10YR 6/1) silty clay; weak very coarse prismatic structure; firm; many coarse prominent brownish yellow (10YR 6/6) masses of iron accumulation and common fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: Less than 20 inches
Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 50 to 80 inches
Slope range: 5 to 10 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam, silty clay loam, or clay loam

Bt, Btg, 2Bt, or 2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—clay, clay loam, silty clay, or silty clay loam

2Cg horizon (if it occurs):
Hue—10YR, 7.5YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—clay, clay loam, silty clay, silty clay loam, or loam

660C2—Coatsburg silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Coatsburg and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The somewhat poorly drained Atlas soils, which have a light-colored surface soil
- Severely eroded soils that have more clay in the surface layer than the Coatsburg soil
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The somewhat poorly drained Keller soils, which have less clay in the upper part of the subsoil than the Coatsburg soil; in areas upslope from the Coatsburg soil
- Lawson soils on flood plains along drainageways
- The well drained Ursa soils, which have a light-colored surface layer

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Creal Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon for MLRA 115C

Creal silt loam, 0 to 2 percent slopes, at an elevation of 608 feet; 2,270 feet west and 2,460 feet south of the northeast corner of sec. 9, T. 3 S., R. 7 W.; USGS Payson, Illinois, topographic quadrangle; lat. 39 degrees 49 minutes 22 seconds N. and long. 91 degrees 12 minutes 42 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate thin platy structure parting to moderate very fine granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

Eg1—9 to 14 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/2) dry; moderate thin

and medium platy structure; friable; few very fine roots; very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; few fine faint dark grayish brown (2.5Y 7/2) clay depletions between peds, few fine distinct brown (7.5YR 4/4) masses of iron accumulation throughout, and few fine distinct black (7.5YR 2/1) iron and manganese concretions throughout; neutral; clear smooth boundary.

Eg2—14 to 19 inches; grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to moderate fine subangular blocky; friable; few very fine roots; very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; many fine faint light brownish gray (2.5Y 6/2) clay depletions between peds, common fine distinct brown (7.5YR 4/4) masses of iron accumulation throughout, and common fine distinct black (7.5YR 2/1) iron and manganese concretions throughout; neutral; clear smooth boundary.

Btg—19 to 24 inches; grayish brown (10YR 5/2) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds and very few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine faint light brownish gray (2.5Y 6/2) clay depletions between peds, few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, and few fine distinct black (7.5YR 2/1) iron and manganese concretions throughout; moderately acid; clear smooth boundary.

Bt1—24 to 29 inches; brown (10YR 5/3) silty clay loam; moderate fine prismatic structure; friable; many distinct grayish brown (10YR 5/2) clay films, few distinct light brownish gray (2.5Y 6/2) silt coats on faces of peds, and very few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (7.5YR 2/1) iron and manganese concretions throughout, and few fine distinct gray (10YR 6/1) iron depletions throughout; moderately acid; clear smooth boundary.

Bt2—29 to 41 inches; pale brown (10YR 6/3) silty clay loam; weak coarse prismatic structure; friable; common distinct grayish brown (10YR 5/2) clay films, very few distinct light brownish gray (2.5Y 6/2) silt coats on faces of peds, and very few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (7.5YR 2/1) iron and manganese concretions throughout, and few fine distinct gray (10YR 6/1) iron depletions throughout; moderately acid; clear smooth boundary.

Bt3—41 to 51 inches; pale brown (10YR 6/3) silty clay loam; moderate medium prismatic structure; friable; common distinct grayish brown (10YR 5/2) clay films, common distinct light brownish gray (2.5Y 6/2) silt coats on faces of peds, and very few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (7.5YR 2/1) iron-manganese concretions throughout, and few fine distinct gray (10YR 6/1) iron depletions throughout; slightly acid; gradual smooth boundary.

B´tg—51 to 80 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure; friable; few distinct grayish brown (10YR 5/2) clay films, few distinct light gray (2.5Y 7/2) silt coats on faces of peds, and very few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, few fine distinct black (7.5YR 2/1) iron and manganese concretions throughout, and few fine faint gray (2.5Y 6/1) iron depletions throughout; slightly acid.

MLRA Series Range in Characteristics

Depth to top of argillic horizon: 19 to 36 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

E or Eg horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

Cg horizon (if it occurs):
Hue—10YR or 2.5Y

Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

337A—Creal silt loam, 0 to 2 percent slopes

Setting

Landform: Alluvial fans
Position on the landform: Footslopes
Type of landscape: Stream terraces

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Slope alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Creal and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that do not have a gray subsurface layer

Dissimilar soils:
- The moderately well drained Blyton soils on flood plains along drainageways
- The poorly drained Twomile soils in the slightly lower positions on the landform
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Crider Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Paleudalfs

Typical Pedon for MLRA 115C

Crider silt loam, 5 to 10 percent slopes, eroded, at an elevation of 645 feet; 2,000 feet east and 200 feet south of the northwest corner of sec. 2, T. 1 N., R. 8 W.; USGS Mendon, Illinois, topographic quadrangle; lat. 40 degrees 6 minutes 34 seconds N. and long. 91 degrees 17 minutes 31 seconds W., NAD 27:

Ap—0 to 8 inches; 95 percent brown (10YR 4/3) and 5 percent yellowish brown (10YR 5/6) silt loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 12 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; common very fine roots; very few distinct brown (10YR 4/3) clay films on faces of peds and very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; slightly acid; clear smooth boundary.

Bt2—12 to 26 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—26 to 35 inches; yellowish brown (10YR 5/6) silty clay loam; weak coarse subangular blocky structure; friable; very few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; gradual smooth boundary.

2Bt4—35 to 47 inches; yellowish red (5YR 5/6) silty clay loam; weak medium prismatic structure; firm; very few faint brown (7.5YR 4/3) clay films and very few faint dark brown (7.5YR 3/2) organic coats in root channels and/or pores; moderately acid; clear smooth boundary.

2Bt5—47 to 61 inches; yellowish red (5YR 5/6) silty clay; weak coarse prismatic structure; very firm; very few faint reddish brown (5YR 4/4) clay films on faces of peds, very few faint dark brown (7.5YR 3/2) organic coats in root channels and/or pores, and very few faint brown (7.5YR 5/4) clay films in root channels and/or pores; 1 percent limestone gravel; moderately acid; clear smooth boundary.

2BC—61 to 72 inches; yellowish red (5YR 5/6) silty clay; moderate medium prismatic structure; very firm; very few faint brown (7.5YR 5/4) clay films and very few faint dark brown (7.5YR 3/2) organic coats in root channels and/or pores; 1 percent limestone gravel and 2 percent cherty gravel; slightly acid; abrupt smooth boundary.

2R—72 inches; limestone bedrock.

MLRA Series Range in Characteristics

Thickness of the loess: 20 to 45 inches
Depth to lithic contact: More than 60 inches
Depth to base of diagnostic horizon: More than 60 inches
Slope range: 5 to 18 percent

Ap or A horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR, 7.5YR, or 5YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—10YR, 2.5YR, or 5YR
Value—3 to 5
Chroma—4 to 8
Texture—silty clay, clay, or silty clay loam
Content of rock fragments—0 to 35 percent

629C2—Crider silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Side slopes and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess and the underlying residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Crider and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have more clay in the surface layer than the Crider soil
• Soils that have more clay in the upper part of the subsoil than the Crider soil

Dissimilar soils:
• Menfro and Winfield soils, which have less clay in the lower part of the subsoil than the Crider soil
• Soils that have limestone bedrock at a depth of less than 60 inches
• Soils that have limestone bedrock outcrops

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

629D2—Crider silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess and the underlying residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Crider and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have more clay in the surface layer than the Crider soil
• Soils that have more clay in the upper part of the subsoil than the Crider soil

Dissimilar soils:
• Menfro and Winfield soils, which have less clay in the lower part of the subsoil than the Crider soil
• Soils that have limestone bedrock at a depth of less than 60 inches
• Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Downsouth Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 115C

Downsouth silt loam, 2 to 5 percent slopes, at an elevation of 705 feet; 900 feet south and 30 feet east of the northwest corner of sec. 9, T. 1 S., R. 8 W.; USGS Mendon, Illinois, topographic quadrangle; lat. 40 degrees 0 minutes 13.5 seconds N. and long. 91 degrees 20 minutes 8.5 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; neutral; abrupt smooth boundary.

E—7 to 11 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure parting to weak fine granular; friable; common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; neutral; clear smooth boundary.

BE—11 to 15 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; neutral; clear smooth boundary.

Bt1—15 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common prominent light gray (10YR 7/1) silt coats and many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—21 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct light gray (10YR 7/1) silt coats and many distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct black (10YR 2/1) iron and manganese concretions throughout; moderately acid; clear smooth boundary.

Bt3—30 to 41 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to weak coarse subangular blocky; firm; few distinct light gray (10YR 7/1) silt coats and common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct black (10YR 2/1) iron and manganese concretions throughout, few fine distinct strong brown (7.5YR 4/6) masses of iron accumulation throughout, and few fine distinct light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bt4—41 to 51 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; friable; few distinct light gray (10YR 7/1) silt coats and common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct black (10YR 2/1) iron and manganese concretions throughout, few fine faint brown (7.5YR 4/4) masses of iron accumulation throughout, and few fine distinct light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual smooth boundary.

Bt5—51 to 63 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; friable; common distinct light gray (10YR 7/1) silt coats and common distinct brown (10YR 4/3) clay films on faces of peds; few fine faint brown (7.5YR 4/4) masses of iron accumulation and few fine distinct light brownish gray (10YR 6/2) iron depletions throughout; slightly acid; clear smooth boundary.

BC—63 to 73 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure; friable; few distinct light gray (10YR 7/1) silt coats on faces of peds and few distinct brown (10YR 4/3) clay films in root channels and/or pores; few fine faint brown (7.5YR 4/4) masses of iron accumulation and few fine distinct light brownish gray (10YR 6/2) iron depletions throughout; slightly acid; clear smooth boundary.

C—73 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct brown (10YR 4/3) clay films in root channels and/or pores; common fine faint brown (7.5YR 4/4) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) iron and manganese concretions throughout, and common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; slightly acid.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 42 to 70 inches
Slope range: 2 to 10 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

283B—Downsouth silt loam, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Downsouth and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• The well drained Menfro soils, which have a light-colored surface layer
• The well drained Wakenda soils, which have a thicker dark surface soil than that of the Downsouth soil
• Winfield soils, which have a light-colored surface layer

Dissimilar soils:
• The somewhat poorly drained Bethalto soils in the slightly lower positions on the landform
• The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Downsouth soil and have a light-colored surface layer; in areas downslope from the Downsouth soil
• The somewhat poorly drained Clarksdale soils, which have more clay in the subsoil than the Downsouth soil; in the slightly lower positions on the landform
• The somewhat poorly drained Edwardsville soils, which have a thicker dark surface soil than that of the Downsouth soil; on broad summits
• The somewhat poorly drained Emery soils, which have more sand in the lower part of the subsoil than the Downsouth soil; in areas downslope from the Downsouth soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

283C2—Downsouth silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Loess
Special feature: The Downsouth soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Downsouth and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• The well drained Menfro soils, which have a light-colored surface layer
• The well drained Wakenda soils, which have a thicker dark surface soil than that of the Downsouth soil
• Winfield soils, which have a light-colored surface layer

Dissimilar soils:
• The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Downsouth soil and have a light-colored surface layer; in areas downslope from the Downsouth soil
• The somewhat poorly drained Emery soils, which have more sand in the lower part of the subsoil than the Downsouth soil; in areas downslope from the Downsouth soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Drury Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Dystric Eutrudepts

Typical Pedon for MLRA 115C

Drury silt loam, 2 to 5 percent slopes, at an elevation of 545 feet; 100 feet west and 1,740 feet south of the northeast corner of sec. 15, T. 2 S., R. 8 W.; USGS Quincy East, Illinois, topographic quadrangle; lat. 39 degrees 53 minutes 58 seconds N. and long. 91 degrees 18 minutes 10 seconds W., NAD 27:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; very friable; common fine roots; neutral; clear smooth boundary.

E—6 to 13 inches; brown (10YR 5/3) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure; very friable; common fine roots; very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; neutral; clear smooth boundary.

BE—13 to 20 inches; yellowish brown (10YR 5/4) silt loam; moderate medium platy structure; friable; few very fine roots; very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; common distinct light gray (10YR 7/1) clay depletions throughout; slightly acid; gradual smooth boundary.

Bt1—20 to 28 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 5/3) clay films on faces of peds and few distinct light brownish gray (10YR 6/2) silt coats on faces of peds and in pores; moderately acid; gradual smooth boundary.

Bt2—28 to 41 inches; yellowish brown (10YR 5/6) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films and common distinct light brownish gray (10YR 6/2) silt coats on faces of peds; few fine faint strong brown (7.5YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bt3—41 to 50 inches; yellowish brown (10YR 5/6) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films and common distinct light brownish gray (10YR 6/2) silt coats on faces of peds; moderately acid; clear smooth boundary.

C—50 to 80 inches; yellowish brown (10YR 5/6) loam; massive; friable; very few distinct dark yellowish brown (10YR 4/4) clay films and very few distinct light brownish gray (10YR 6/2) silt coats in root channels and/or pores; moderately acid.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 40 inches
Depth to base of diagnostic horizon: 26 to 60 inches
Slope range: 0 to 10 percent

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam or silt

E horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silt

Bt or Bw horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—2 to 6
Texture—silt loam

C horizon:
Hue—10YR
Value—3 to 6
Chroma—2 to 6
Texture—silt loam or loam; loam and strata of very fine sandy loam below a depth of 45 inches in some pedons

75A—Drury silt loam, 0 to 2 percent slopes

Setting

Landform: Alluvial fans
Position on the landform: Footslopes
Type of landscape: Stream terraces

Soil Properties and Qualities

Drainage class: Well drained

Parent material: Slope alluvium
Special feature: The Drury soil in this map unit has a thicker surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Drury and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Soils that have more clay in the subsoil than the Drury soil
• Soils that have more sand in the underlying material than the Drury soil
• Worthen soils, which have a darker surface soil than that of the Drury soil

Dissimilar soils:
• The somewhat poorly drained Creal soils in the slightly lower positions on the landform
• Soils that have more sand throughout than the Drury soil
• The somewhat poorly drained Wakeland soils on flood plains

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

75B—Drury silt loam, 2 to 5 percent slopes

Setting

Landform: Alluvial fans
Position on the landform: Footslopes
Type of landscape: Stream terraces

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Slope alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Drury and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Soils that have more clay in the subsoil than the Drury soil
• Soils that have more sand in the underlying material than the Drury soil
• Worthen soils, which have a darker surface soil than that of the Drury soil

Dissimilar soils:
• The somewhat poorly drained Creal soils in the slightly lower positions on the landform
• Hickory and Lindley soils, which have more sand in the subsoil than the Drury soil; in areas upslope from the Drury soil
• Soils that have more sand throughout than the Drury soil
• The somewhat poorly drained Wakeland soils on flood plains

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

75C2—Drury silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Alluvial fans
Position on the landform: Footslopes
Type of landscape: Stream terraces

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Slope alluvium
Special feature: The Drury soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Drury and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Severely eroded soils that have more clay in the surface layer than the Drury soil
- Soils that have clay in the subsoil
- Soils that have more sand in the underlying material than the Drury soil
- Soils that have slopes of more than 10 percent
- Worthen soils, which have a darker surface soil than that of the Drury soil

Dissimilar soils:
- The somewhat poorly drained Creal soils in the slightly lower positions on the landform
- Hickory and Lindley soils, which have more sand in the subsoil than the Drury soil; in areas upslope from the Drury soil
- Soils that have sand throughout
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Dupo Series

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, nonacid, mesic Aquic Udifluvents

Typical Pedon for MLRA 115C

Dupo silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 470 feet; 800 feet south and 2,100 feet east of the northwest corner of sec. 14, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 4 minutes 54 seconds N. and long. 91 degrees 24 minutes 40 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; few very fine roots; common fine distinct black (10YR 2/1) masses of iron and manganese accumulation between peds; slightly acid; clear smooth boundary.

C—7 to 25 inches; stratified, 55 percent brown (10YR 4/3), 20 percent brown (10YR 5/3), and 20 percent dark grayish brown (10YR 4/2) silt loam; massive; friable; few very fine roots; common fine and medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

Cg—25 to 36 inches; stratified, 75 percent dark gray (10YR 4/1) and 20 percent brown (10YR 5/3) silt loam; massive; friable; common fine and medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

2Ab—36 to 51 inches; very dark gray (10YR 3/1) silty clay; weak fine prismatic structure; firm; slightly alkaline; clear smooth boundary.

2Bgb1—51 to 72 inches; dark gray (5Y 4/1) silty clay; moderate medium prismatic structure; firm; common fine prominent brown (7.5YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

2Bgb2—72 to 85 inches; gray (5Y 5/1) silty clay; weak medium prismatic structure; firm; common fine prominent black (10YR 2/1) masses of iron and manganese accumulation and many fine and medium prominent brown (7.5YR 4/4) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Depth to buried soil: 20 to 40 inches
Depth to carbonates (if they occur): More than 40 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam or silt

C or Cg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture—silt loam; strata of silt in some pedons

2Ab horizon:
Hue—10YR or N
Value—2 to 4
Chroma—0 to 2
Texture—silty clay, clay, or silty clay loam

2Bgb or 2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay, clay, or silty clay loam

8180A—Dupo silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Dupo and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Soils that have a darker surface layer than that of the Dupo soil
• Wakeland soils, which do not have a buried soil within a depth of 40 inches; in positions on the landform similar to those of the Dupo soil

Dissimilar soils:
• The moderately well drained Blyton soils, which do not have a buried soil
• Soils that have more sand in the upper part than the Dupo soil
• Soils in which the buried soil is at a depth of less than 20 inches
• The poorly drained Titus soils, which have more clay in the upper part than the Dupo soil and have a darker surface soil; in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Edwardsville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon for MLRA 115C

Edwardsville silt loam, 0 to 2 percent slopes, at an elevation of 730 feet; 1,660 feet west and 1,980 feet north of the southeast corner of sec. 9, T. 1 S., R. 8 W.; USGS Quincy East, Illinois, topographic quadrangle; lat. 39 degrees 59 minutes 53 seconds N. and long. 91 degrees 19 minutes 22 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; few very fine roots throughout; slightly acid; clear smooth boundary.
A1—8 to 13 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; friable; few very fine roots throughout; moderately acid; clear smooth boundary.
A2—13 to 18 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; friable; few very fine roots throughout; many distinct black (10YR 2/1) organic coats on faces of peds and in pores; very few fine distinct brown (10YR 4/3) masses of iron accumulation throughout and few fine prominent light gray (10YR 7/1) clay depletions between peds; moderately acid; clear smooth boundary.
BA—18 to 23 inches; dark brown (10YR 3/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots throughout; many distinct very dark gray (10YR 3/1) organic coats on faces of peds and in pores; very few fine distinct black (2.5Y 2/1) masses of iron and manganese and few fine faint brown (10YR 4/3) masses of iron and manganese accumulation throughout; strongly acid; clear smooth boundary.
Btg1—23 to 31 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate medium subangular blocky structure; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds and common distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores; common fine faint brown (10YR 5/3) masses of iron accumulation throughout, common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; gradual smooth boundary.
Btg2—31 to 40 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds and few faint very dark gray (10YR 3/1) organic coats in root channels and/or pores; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium

brown (10YR 5/3) masses of iron accumulation throughout, common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine faint gray (10YR 6/1) iron depletions lining root channels and/or pores; moderately acid; gradual smooth boundary.

Btg3—40 to 52 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse subangular blocky structure; friable; few faint dark gray (10YR 4/1) clay films on faces of peds and in pores; common coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium faint brown (10YR 5/3) masses of iron accumulation throughout, and common medium black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; gradual smooth boundary.

BCg—52 to 60 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse subangular blocky structure; friable; few faint dark gray (10YR 4/1) clay films in root channels and/or pores; common coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, and common medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; gradual smooth boundary.

Cg—60 to 80 inches; 40 percent light brownish gray (2.5Y 6/2), 35 percent strong brown (7.5YR 5/8), and 25 percent yellowish brown (10YR 5/4) silt loam; massive; friable; very few faint dark gray (10YR 4/1) clay films in root channels and/or pores; common medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 42 to 70 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

Cg or C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

384A—Edwardsville silt loam, 0 to 2 percent slopes

Setting

Landform: Drainage divides
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Edwardsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Bethalto soils, which have a thinner dark surface layer than that of the Edwardsville soil and are on narrower summits
- Soils that have a gray subsurface layer

Dissimilar soils:
- The moderately well drained Downsouth soils, which have a thinner dark surface soil than that of the Edwardsville soil; in the slightly higher positions on the landform
- Poorly drained soils in the slightly lower positions on the landform
- The well drained Wakenda soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

384B—Edwardsville silt loam, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Edwardsville soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Edwardsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bethalto soils, which have a thinner dark surface layer than that of the Edwardsville soil and are on narrower summits
• Soils that have a gray subsurface layer

Dissimilar soils:
• The moderately well drained Downsouth soils, which have a thinner dark surface soil than that of the Edwardsville soil; in the slightly higher positions on the landform
• The well drained Wakenda soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

• “Agronomy” section
• “Wildlife Habitat” section
• “Engineering” section
• “Soil Properties” section

El Dara Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 115C (Official Series Description)

El Dara silt loam, 5 to 10 percent slopes, eroded, at an elevation of 775 feet; 460 feet west and 600 feet north of the southeast corner of sec. 1, T. 3 S., R. 7 W.; USGS Payson, Illinois, topographic quadrangle; lat. 39 degrees 49 minutes 53 seconds N. and long. 91 degrees 9 minutes 4.5 seconds W., NAD 27:

Ap—0 to 6 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak thin platy structure parting to moderate fine subangular blocky; friable; many very fine roots throughout and few fine roots between peds; moderately acid; clear smooth boundary.

Bt1—6 to 9 inches; brown (10YR 5/3) loam; moderate medium subangular blocky structure; friable; common fine roots throughout and many very fine roots between peds; few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—9 to 17 inches; yellowish brown (10YR 5/4) loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common fine roots throughout and many very fine roots between peds; common distinct light gray (10YR 7/1) silt coats on faces of peds and common faint dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; very strongly acid; clear wavy boundary.

Bt3—17 to 27 inches; light yellowish brown (10YR 6/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; many very fine roots between peds; few prominent light gray (10YR 7/2) silt coats on faces of peds and common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few fine distinct yellowish brown (10YR 5/6) masses of iron and manganese accumulation between peds; very strongly acid; clear smooth boundary.

Bt4—27 to 31 inches; light yellowish brown (10YR 6/4) loam; weak medium subangular blocky structure; friable; few very fine roots between peds; very few prominent light gray (10YR 7/2) silt coats on faces of peds and few prominent dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; very strongly acid; gradual wavy boundary.

Bt5—31 to 39 inches; brownish yellow (10YR 6/6) sandy loam; weak medium subangular blocky structure; friable; few very fine roots between peds; few prominent dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine faint yellowish brown (10YR 5/6) masses of iron

accumulation throughout; very strongly acid; gradual wavy boundary.

Bt6—39 to 53 inches; light yellowish brown (10YR 6/4) sandy loam; weak coarse prismatic structure parting to weak coarse subangular blocky; friable; few very fine roots between peds; few prominent dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; common fine distinct yellowish brown (10YR 5/8) masses of iron accumulation and common medium distinct light brownish gray (10YR 6/2) iron depletions throughout; very strongly acid; clear wavy boundary.

Bt7—53 to 61 inches; light yellowish brown (10YR 6/4) loam; weak coarse prismatic structure; friable; very few prominent dark yellowish brown (10YR 4/4) clay films on faces of peds and very few prominent light gray (10YR 7/1) silt coats on faces of peds; few fine distinct strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation throughout, and common medium distinct light brownish gray (10YR 6/2) iron depletions throughout; very strongly acid; clear wavy boundary.

BC—61 to 66 inches; light yellowish brown (10YR 6/4) sandy clay loam; moderate coarse prismatic structure; friable; very few distinct yellowish brown (10YR 5/4) clay films on faces of peds and in pores and common prominent light gray (10YR 7/1) silt coats on faces of peds and in pores; common fine distinct strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation throughout, common coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; 1 percent rounded quartzite; very strongly acid; clear wavy boundary.

C1—66 to 78 inches; light yellowish brown (10YR 6/4) sandy clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; very few prominent dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; common fine distinct strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation throughout, common coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; strongly acid; clear wavy boundary.

C2—78 to 88 inches; light brownish gray (10YR 6/2) sandy clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; friable; very few prominent grayish brown (10YR 5/2) clay films and very few prominent gray (10YR 5/1) clay films on faces of peds and in pores; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium prominent reddish yellow (7.5YR 6/8) masses of iron accumulation throughout, and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; strongly acid; clear wavy boundary.

C3—88 to 96 inches; light brownish gray (10YR 6/2) sandy clay loam; weak coarse prismatic structure; firm; very few prominent gray (10YR 6/1) clay films on faces of peds and in pores; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation throughout; strongly acid.

MLRA Series Range in Characteristics

Thickness of the loess: 0 to 20 inches
Depth to base of diagnostic horizon: 40 to 80 inches
Slope range: 5 to 60 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, loam, or silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—sandy loam, fine sandy loam, loam, or silt loam

Bt or 2Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy clay loam, clay loam, loam, sandy loam, fine sandy loam, or silty clay loam
Content of rock fragments—0 to 15 percent

C or 2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 8
Texture—sandy loam, loamy sand, sand, loam, silt loam, or sandy clay loam
Content of rock fragments—0 to 15 percent

264C2—El Dara silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Cretaceous deposits

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

El Dara and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The somewhat poorly drained Passport soils in areas upslope from the El Dara soil
- Severely eroded soils that have more clay in the surface layer than the El Dara soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less sand in the upper part of the subsoil than the El Dara soil; in areas upslope from the El Dara soil
- The somewhat poorly drained Emery soils, which have less sand in the upper part of the subsoil than the El Dara soil and have a darker surface layer; in areas upslope from the El Dara soil
- Marseilles soils, which formed in shale; in areas downslope from the El Dara soil
- Keswick soils, which have more clay in the subsoil than the El Dara soil; in areas upslope from the El Dara soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

264D2—El Dara silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Cretaceous deposits
Special feature: The El Dara soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

El Dara and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The somewhat poorly drained Passport soils in areas upslope from the El Dara soil
- Severely eroded soils that have more clay in the surface layer than the El Dara soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less sand in the upper part of the subsoil than the El Dara soil; in areas upslope from the El Dara soil
- Marseilles soils, which formed in shale; in areas downslope from the El Dara soil
- Keswick soils, which have more clay in the subsoil than the El Dara soil; in areas upslope from the El Dara soil
- Lamont soils, which have less clay in the subsoil than the El Dara soil; in the more sloping positions on the landform
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section

- “Engineering” section
- “Soil Properties” section

264D3—El Dara sandy loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Cretaceous deposits
Special feature: The El Dara soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

El Dara and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Moderately eroded soils that have less clay in the surface layer than the El Dara soil
- The somewhat poorly drained Passport soils in areas upslope from the El Dara soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less sand in the upper part of the subsoil than the El Dara soil; in areas upslope from the El Dara soil
- Marseilles soils, which formed in shale; in areas downslope from the El Dara soil
- Keswick soils, which have more clay in the subsoil than the El Dara soil; in areas upslope from the El Dara soil
- Lamont soils, which have less clay in the subsoil than the El Dara soil; in the more sloping positions on the landform
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

264E2—El Dara sandy loam, 18 to 25 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Cretaceous deposits
Special feature: The El Dara soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

El Dara and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The somewhat poorly drained Passport soils in the higher, less sloping positions
- Severely eroded soils that have more clay in the surface layer than the El Dara soil
- Soils that have a water table at a depth of more than 3.5 feet
- Soils that have more sand in the surface layer than the El Dara soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less sand in the upper part of the subsoil than the El Dara soil; in the higher, less sloping positions
- Marseilles soils, which formed in shale; in areas downslope from the El Dara soil
- Keswick soils, which have more clay in the subsoil than the El Dara soil; in areas upslope from the El Dara soil
- Lamont soils, which have less clay in the subsoil than the El Dara soil
- Soils that have more sand throughout than the El Dara soil
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section

- “Engineering” section
- “Soil Properties” section

264G—El Dara fine sandy loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Cretaceous deposits

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

El Dara and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The somewhat poorly drained Passport soils in the higher, less sloping positions
- Severely eroded soils that have more clay in the surface layer than the El Dara soil
- Soils that have a water table at a depth of more than 3.5 feet
- Soils that have more sand in the surface layer than the El Dara soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less sand in the upper part of the subsoil than the El Dara soil; in the higher, less sloping positions
- Marseilles soils, which formed in shale; in areas downslope from the El Dara soil
- Lamont soils, which have less clay in the subsoil than the El Dara soil
- Lindley soils in areas upslope from the El Dara soil
- Soils that have more sand throughout than the El Dara soil
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Elsah Series

Taxonomic classification: Loamy-skeletal, mixed, superactive, nonacid, mesic Typic Udifluvents

Typical Pedon for MLRA 115C

Elsah gravelly loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 540 feet; 1,900 feet south and 1,450 feet west of the northeast corner of sec. 8, T. 5 S., R. 6 W.; USGS Barry, Illinois, topographic quadrangle; lat. 39 degrees 38 minutes 58 seconds N. and long. 91 degrees 6 minutes 34 seconds W., NAD 27:

A—0 to 6 inches; 70 percent brown (10YR 5/3) and 30 percent dark brown (10YR 3/3) gravelly loam, light yellowish brown (10YR 6/4) dry; weak medium granular structure; friable; many fine and common coarse roots; 20 percent chert gravel; neutral; clear wavy boundary.

C1—6 to 12 inches; brown (10YR 5/3) very gravelly loam; massive; friable; common fine and few coarse roots; 25 percent chert gravel and 15 percent cobbles; slightly effervescent; slightly alkaline; clear wavy boundary.

C2—12 to 29 inches; yellowish brown (10YR 5/6) very gravelly sandy loam; massive; very friable; few medium and coarse roots; 40 percent chert gravel and 15 percent cobbles; slightly alkaline; gradual wavy boundary.

C3—29 to 42 inches; dark yellowish brown (10YR 4/4) very gravelly sandy loam; massive; friable; few fine and medium roots; 40 percent chert gravel and 10 percent cobbles; slightly alkaline; clear wavy boundary.

C4—42 to 56 inches; stratified, 60 percent yellowish brown (10YR 5/6) and 40 percent brown (10YR 5/3) gravelly loam; massive; friable; 20 percent cherty gravel and 5 percent cobbles; slightly effervescent; slightly alkaline; clear wavy boundary.

C5—56 to 60 inches; yellowish brown (10YR 5/6) very gravelly sandy loam; massive; very friable; 45 percent chert gravel and 10 percent cobbles; neutral.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 6 to 18 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 60 percent

C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam, loam, or sandy loam
Content of rock fragments—5 to 85 percent

3475A—Elsah gravelly loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Elsah soil: 90 percent
Dissimilar soils: 10 percent

Dissimilar soils:
• The moderately well drained Blyton soils, which have fewer rock fragments throughout than the Elsah soil
• The somewhat poorly drained Wakeland soils, which have fewer rock fragments throughout than the Elsah soil; in the slightly lower positions on the landform
• Wirt soils, which have fewer rock fragments throughout than the Elsah soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Emery Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 115C (Official Series Description)

Emery silt loam, 2 to 5 percent slopes, eroded, at an elevation of 740 feet; 850 feet north and 250 feet east of the southwest corner of sec. 27, T. 2 S., R. 7 W.; USGS Payson, Illinois, topographic quadrangle; lat. 39 degrees 51 minutes 49 seconds N. and long. 91 degrees 12 minutes 6 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; common fine and medium roots throughout; many fine and medium moderate-continuity tubular pores; few distinct light brownish gray (10YR 6/2) clay depletions throughout; slightly acid; clear smooth boundary.

Bt1—7 to 18 inches; olive brown (2.5Y 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common fine and medium roots throughout; common fine and medium moderate-continuity tubular pores; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine and medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common fine distinct gray (10YR 6/1) iron depletions throughout; slightly acid; clear smooth boundary.

Bt2—18 to 26 inches; olive brown (2.5Y 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common fine and medium roots throughout; common fine and medium moderate-continuity tubular pores; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine and medium distinct dark yellowish brown (10YR 4/6) masses of iron accumulation throughout, common fine and medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine distinct gray (10YR 6/1) iron depletions throughout; slightly acid; clear smooth boundary.

Btg1—26 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium subangular blocky structure; friable; common fine and medium roots throughout; common fine and medium continuous tubular pores; very few distinct gray (10YR 5/1) clay films on faces of peds; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium distinct black (2.5Y 2/1) masses of

iron and manganese accumulation throughout; slightly acid; clear smooth boundary.

2Btg2—37 to 45 inches; light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; friable; very few distinct gray (10YR 5/1) clay films on faces of peds; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; clear smooth boundary.

2Btg3—45 to 55 inches; gray (10YR 6/1) silt loam; weak medium and coarse subangular blocky structure; friable; very few distinct gray (10YR 5/1) clay films on faces of peds; common fine and medium prominent brownish yellow (10YR 6/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

2BCtg—55 to 67 inches; gray (10YR 5/1) silt loam; weak coarse subangular blocky structure; friable; very few distinct gray (10YR 5/1) clay films on faces of peds; common fine and medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

2Cg—67 to 87 inches; grayish brown (10YR 5/2) silt loam; massive; friable; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the loess: 30 to 50 inches
Thickness of the solum: 40 to 60 inches
Slope range: 2 to 10 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt, Btg, or 2Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, silt loam, or clay loam

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, silt loam, loam, or clay loam

538B2—Emery silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Emery and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Bunkum soils, which have a lighter colored surface layer than that of the Emery soil
- Clarksdale soils, which have more clay in the upper part of the subsoil than the Emery soil; in areas upslope from the Emery soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Emery soil and have a lighter colored surface layer
- Keller soils, which have more clay in the lower part of the subsoil than the Emery soil

Dissimilar soils:
- Bethalto soils, which have less sand in the lower part of the subsoil than the Emery soil; in areas upslope from the Emery soil
- Greenbush and Downsouth soils, which have less sand in the lower part of the subsoil than the Emery soil and are better drained; in areas upslope from the Emery soil
- Timewell and Ipava soils, which have less sand in the lower part of the subsoil than the Emery soil and have a thicker dark surface soil; in areas upslope from the Emery soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

538C2—Emery silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying pedisediment

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Emery and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Bunkum soils, which have a lighter colored surface soil than that of the Emery soil
- Clarksdale soils, which have more clay in the upper part of the subsoil than the Emery soil; in areas upslope from the Emery soil
- Fishhook soils, which have more clay in the lower part of the subsoil than the Emery soil and have a lighter colored surface layer
- Keller soils, which have more clay in the lower part of the subsoil than the Emery soil

Dissimilar soils:
- Bethalto soils, which have less sand in the lower part of the subsoil than the Emery soil; in areas upslope from the Emery soil
- Greenbush and Downsouth soils, which have less sand in the lower part of the subsoil than the Emery soil and are better drained; in areas upslope from the Emery soil
- Timewell and Ipava soils, which have less sand in the lower part of the subsoil than the Emery soil and have a thicker dark surface soil; in areas upslope from the Emery soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Fishhook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon for MLRA 115C

Fishhook silt loam, 5 to 10 percent slopes, eroded, at an elevation of 665 feet; 1,380 feet south and 455 feet east of the northwest corner of sec. 8, T. 1 N., R. 6 W.; USGS Coatsburg, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 25 seconds N. and long. 91 degrees 7 minutes 40 seconds W., NAD 27:

Ap—0 to 5 inches; 80 percent dark grayish brown (10YR 4/3) and 20 percent brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many very fine and fine roots; common fine pores; moderately acid; abrupt smooth boundary.

Bt1—5 to 10 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; friable; many very fine roots; few fine pores; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bt2—10 to 22 inches; brown (10YR 5/3) silty clay loam; weak medium and coarse subangular blocky structure; friable; few fine and medium roots; few distinct brown (10YR 4/3) clay films; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine faint grayish brown (10YR 5/2) iron depletions throughout; moderately acid; clear smooth boundary.

2Btg1—22 to 31 inches; gray (10YR 5/1) silty clay loam; weak fine prismatic structure; friable; few fine and medium roots; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common medium faint light brownish gray (10YR 6/2) iron depletions throughout; slightly acid; clear smooth boundary.

2Btg2—31 to 44 inches; gray (10YR 5/1) clay loam; weak medium prismatic structure; firm; few fine and medium roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium

distinct dark yellowish brown (10YR 4/4) masses of iron accumulation throughout and few fine distinct white (10YR 8/1) masses of barite throughout; neutral; clear smooth boundary.

2Btg3—44 to 55 inches; gray (10YR 5/1) clay; moderate medium prismatic structure; firm; few fine roots; few distinct gray (10YR 6/1) clay films on faces of peds; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation throughout and few fine distinct white (10YR 8/1) masses of barite throughout; neutral; clear smooth boundary.

2BCtg1—55 to 66 inches; gray (5Y 5/1) clay loam; moderate medium subangular blocky and moderate fine subangular blocky structure; firm; few fine roots; few distinct dark gray (5Y 4/1) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout and few fine distinct white (10YR 8/1) masses of barite throughout; neutral; gradual smooth boundary.

2BCtg2—66 to 74 inches; gray (5Y 5/1) clay loam; moderate medium prismatic structure; firm; few fine roots; few distinct dark gray (5Y 4/1) clay films on faces of peds; many medium prominent dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation and few medium distinct black (2.5Y 2/1) iron and manganese concretions throughout and few fine distinct white (10YR 8/1) masses of barite throughout; neutral; clear smooth boundary.

2BCtg3—74 to 86 inches; gray (5Y 5/1) clay loam; moderate medium prismatic structure; firm; few fine roots; few distinct dark gray (5Y 4/1) clay films on faces of peds; 1 percent limestone-cherty gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to base of diagnostic horizon: More than 50 inches
Slope range: 2 to 18 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam

2Bt or 2Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—2 to 7
Chroma—1 or 2
Texture—clay loam, clay, silty clay, silty clay loam, or loam
Content of rock fragments—0 to 12 percent

2Cg horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—clay loam or loam
Content of rock fragments—0 to 12 percent

6B2—Fishhook silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less clay in the underlying material than the Fishhook soil
• Emery soils, which have less clay in the underlying material than the Fishhook soil and have a darker surface layer
• Keller soils, which have a darker surface layer than that of the Fishhook soil

Dissimilar soils:
• Atlas soils, which have more clay in the upper part of the subsoil than the Fishhook soil; in areas downslope from the Fishhook soil
• Timewell and Ipava soils, which have a thicker dark surface soil than that of the Fishhook soil and have less clay in the lower part of the subsoil; in areas upslope from the Fishhook soil
• Rozetta soils, which have less clay in the lower part

of the subsoil and underlying material than the Fishhook soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

6C2—Fishhook silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less clay in the underlying material than the Fishhook soil
• Emery soils, which have less clay in the underlying material than the Fishhook soil and have a darker surface layer
• Keller soils, which have a darker surface layer than that of the Fishhook soil
• Areas of moderately well drained soils
• Passport soils, which have less clay in the lower part of the subsoil than the Fishhook soil

Dissimilar soils:
• Atlas soils, which have more clay in the upper part of the subsoil than the Fishhook soil; in areas downslope from the Fishhook soil
• Lawson soils on flood plains along drainageways
• The well drained Rozetta soils, which have less clay in the lower part of the subsoil than the Fishhook soil; in the less sloping positions on the landform
• Timewell and Ipava soils, which have a thicker dark surface soil than that of the Fishhook soil and have less clay in the lower part of the subsoil; in areas upslope from the Fishhook soil
• Ursa soils, which have more clay in the subsoil than the Fishhook soil; in areas downslope from the Fishhook soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

6C3—Fishhook silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till
Special feature: The Fishhook soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less clay in the underlying material than the Fishhook soil
• Keller soils, which have a darker surface layer than that of the Fishhook soil
• Moderately eroded soils that have less clay in the surface layer than the Fishhook soil
• Areas of moderately well drained soils
• Passport soils, which have less clay in the lower part of the subsoil than the Fishhook soil

Dissimilar soils:
• Atlas soils, which have more clay in the upper part of the subsoil than the Fishhook soil; in areas downslope from the Fishhook soil
• Lawson soils on flood plains along drainageways
• The well drained Rozetta soils, which have less clay in the lower part of the subsoil than the Fishhook soil; in the less sloping positions on the landform
• Ursa soils, which have more clay in the subsoil than the Fishhook soil; in areas downslope from the Fishhook soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

6D2—Fishhook silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less clay in the underlying material than the Fishhook soil
• Keller soils, which have a darker surface layer than that of the Fishhook soil
• Areas of moderately well drained soils
• Passport soils, which have less clay in the lower part of the subsoil than the Fishhook soil
• Severely eroded soils that have more clay in the surface layer than the Fishhook soil

Dissimilar soils:
• The well drained Rozetta soils, which have less clay in the lower part of the subsoil than the Fishhook soil; in the less sloping positions on the landform
• The well drained Ursa soils, which have more clay in the upper part of the subsoil than the Fishhook soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

6D3—Fishhook silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till
Special feature: The Fishhook soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less clay in the underlying material than the Fishhook soil
• Moderately eroded soils that have less clay in the surface layer than the Fishhook soil
• Areas of moderately well drained soils
• Passport soils, which have less clay in the lower part of the subsoil than the Fishhook soil

Dissimilar soils:
• The well drained Rozetta soils, which have less clay

in the lower part of the subsoil than the Fishhook soil; in the less sloping positions on the landform
• The well drained Ursa soils, which have more clay in the upper part of the subsoil than the Fishhook soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Gorham Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon for MLRA 115C

Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 470 feet; 2,100 feet west and 570 feet south of the northeast corner of sec. 34, T. 2 S., R. 9 W.; USGS Quincy Southwest, Illinois, topographic quadrangle; lat. 39 degrees 51 minutes 23 seconds N. and long. 91 degrees 25 minutes 22 seconds W., NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to weak fine granular; firm; few very fine roots; neutral; clear smooth boundary.
Btg1—10 to 15 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium subangular blocky structure; friable; few very fine roots; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; few fine prominent brown (7.5YR 4/4) masses of iron accumulation throughout; neutral; gradual smooth boundary.
Btg2—15 to 32 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; many distinct dark gray (2.5Y 4/1) clay films on faces of peds; few fine distinct brown (7.5YR 4/4) masses of iron accumulation and few fine distinct gray (10YR 5/1) iron depletions throughout; neutral; gradual smooth boundary.
Btg3—32 to 40 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium subangular blocky structure; friable; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; common fine distinct brown (7.5YR 4/3) masses of iron accumulation and few fine faint gray (2.5Y 5/1) iron depletions throughout; neutral; abrupt smooth boundary.
2BCtg—40 to 44 inches; dark grayish brown (2.5Y 4/2) clay loam; moderate medium subangular blocky structure; friable; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; common fine distinct brown (7.5YR 4/3) masses of iron accumulation and few fine gray (2.5Y 5/1) iron depletions throughout; neutral; clear smooth boundary.
2BCg—44 to 50 inches; grayish brown (2.5Y 5/2) loamy fine sand and stratified sandy loam; weak coarse subangular blocky structure; very friable; very few distinct dark grayish brown (10YR 4/2) clay films lining pores; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation and few fine faint gray (2.5Y 5/1) iron depletions throughout; slightly acid; clear smooth boundary.
2C—50 to 60 inches; yellowish brown (10YR 5/4) sand; single grain; loose; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of silty or loamy alluvium: More than 40 inches
Depth to base of diagnostic horizon: 35 to 60 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam, silt loam, or silty clay
Content of rock fragments—0 to 15 percent

Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 5
Chroma—0 to 2
Texture—silty clay loam or silty clay
Content of rock fragments—0 to 15 percent

2BCtg, 2Bt, 2Btg, 2Bg, or 2BCg horizon:
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—3 to 5
Chroma—0 to 4
Texture—sandy clay loam, clay loam, loam, sandy loam, loamy sand, or loamy fine sand
Content of rock fragments—0 to 15 percent

2C or 2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—2 to 6

Texture—sand, loamy sand, or sandy loam

8162A—Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Gorham and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Beaucoup soils, which have more clay in the underlying material than the Gorham soil

Dissimilar soils:
- The somewhat poorly drained Riley soils in the slightly higher positions on the landform
- Soils that have more sand throughout than the Gorham soil
- The somewhat poorly drained Tice soils, which have more clay in the underlying material than the Gorham soil; in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Goss Series

Taxonomic classification: Clayey-skeletal, mixed, active, mesic Typic Paleudalfs

Typical Pedon for MLRA 115C

Goss gravelly silt loam, 35 to 60 percent slopes, at an elevation of 615 feet; 2,560 feet east and 25 feet south of the northwest corner of sec. 30, T. 3 S., R. 6 W.; USGS Payson, Illinois, topographic quadrangle; lat. 39 degrees 47 minutes 12 seconds N. and lat. 91 degrees 8 minutes 17 seconds W., NAD 27:

A—0 to 7 inches; brown (7.5YR 4/2) gravelly silt loam, pinkish gray (7.5YR 6/2) dry; weak fine granular structure; friable; 20 percent cherty gravel; slightly acid; clear wavy boundary.

BE—7 to 11 inches; reddish brown (5YR 4/4) gravelly silt loam; moderate very fine angular blocky structure; firm; few distinct brown (7.5YR 4/3) organic coats throughout; 20 percent cherty gravel; moderately acid; clear wavy boundary.

2Bt1—11 to 19 inches; reddish brown (5YR 4/4) very gravelly silty clay; moderate very fine angular blocky structure; firm; common distinct reddish brown (5YR 4/3) clay films on faces of peds and few distinct brown (7.5YR 4/3) organic coats throughout; 50 percent cherty gravel and cobbles; moderately acid; gradual wavy boundary.

2Bt2—19 to 30 inches; reddish brown (5YR 4/4) very gravelly silty clay; moderate very fine angular blocky structure; firm; common distinct reddish brown (5YR 4/3) clay films on faces of peds; 50 percent cherty gravel and cobbles; strongly acid; gradual wavy boundary.

2Bt3—30 to 47 inches; reddish brown (5YR 4/4) very gravelly clay; moderate very fine angular blocky structure; firm; few distinct reddish brown (2.5YR 4/4) clay films on faces of peds; 50 percent cherty gravel and cobbles; strongly acid; gradual wavy boundary.

2Bt4—47 to 62 inches; reddish brown (5YR 4/4) very gravelly clay; moderate very fine angular blocky structure; firm; few distinct reddish brown (5YR 4/3) clay films on faces of peds; 55 percent cherty gravel and cobbles; strongly acid; gradual wavy boundary.

2Bt5—62 to 80 inches; 50 percent yellowish red (5YR 5/6) and 50 percent dark reddish brown (5YR 3/3) very gravelly clay; moderate very fine angular blocky structure; firm; few distinct reddish brown (5YR 4/3) clay films on faces of peds; 55 percent cherty gravel and cobbles; strongly acid.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: More than 60 inches
Slope range: 18 to 60 percent

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 to 4
Chroma—2 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 60 percent

E horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 or 4
Texture—silt loam, loam, or silty clay loam
Content of rock fragments—15 to more than 60 percent

2*Bt horizon:*
Hue—10YR to 5YR
Value—3 to 5
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay
Content of rock fragments—15 to more than 60 percent

606F—Goss gravelly silt loam, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Limestone residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Goss and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Severely eroded soils that have more clay in the surface layer than the Goss soil
- Soils that have less clay throughout than the Goss soil
- Soils that have slopes of more than 35 percent

Dissimilar soils:
- Baylis soils, which have less clay and a lower content of rock fragments in the upper part of the subsoil than the Goss soil; in areas upslope from the Goss soil
- Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

606G—Goss gravelly silt loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Limestone residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Goss and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Severely eroded soils that have more clay in the surface layer than the Goss soil
- Soils that have less clay throughout than the Goss soil

Dissimilar soils:
- Baylis soils, which have less clay and a lower content of rock fragments in the upper part of the subsoil than the Goss soil; in areas upslope from the Goss soil
- Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Greenbush Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon for MLRA 115C

Greenbush silt loam, 2 to 5 percent slopes, at an elevation of 605 feet; 1,950 feet west and 1,400 feet

south of the northeast corner of sec. 1, T. 5 N., R. 3 E.; USGS St. David, Illinois, topographic quadrangle; lat. 40 degrees 26 minutes 52 seconds N. and long. 90 degrees 6 minutes 43 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots throughout; slightly acid; clear smooth boundary.

BE—9 to 14 inches; brown (10YR 5/3) silt loam; weak medium platy structure parting to weak fine granular; friable; few very fine roots throughout; common fine faint light gray (10YR 7/2) clay depletions between peds; moderately acid; gradual smooth boundary.

Bt1—14 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots throughout; common distinct light gray (10YR 7/2) silt coats on faces of peds, few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds, and common distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct black (10YR 2/1) manganese concretions throughout; strongly acid; gradual smooth boundary.

Bt2—18 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; few distinct light gray (10YR 7/2) silt coats on faces of peds, many distinct brown (10YR 4/3) clay films on faces of peds, and few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct black (10YR 2/1) manganese concretions throughout; strongly acid; gradual smooth boundary.

Bt3—24 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; few distinct light gray (10YR 7/2) silt coats on faces of peds, common distinct brown (10YR 4/3) clay films on faces of peds, and few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; few fine distinct black (10YR 2/1) manganese concretions throughout and few fine distinct grayish brown (2.5Y 5/2) iron depletions along root channels and/or pores; very strongly acid; gradual smooth boundary.

Bt4—38 to 54 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to weak coarse subangular blocky; firm; few very fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds and few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) manganese concretions throughout, and common fine distinct grayish brown (2.5Y 5/2) iron depletions along root channels and/or pores; very strongly acid; gradual smooth boundary.

BC—54 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; firm; very few distinct brown (10YR 4/3) clay films on faces of peds and few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) manganese concretions throughout, and common fine distinct grayish brown (2.5Y 5/2) iron depletions along root channels and/or pores; very strongly acid.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: More than 42 inches
Slope range: 2 to 10 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

675B—Greenbush silt loam, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained

Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Greenbush and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 72 inches
- Osco soils, which have a thicker dark surface soil than that of the Greenbush soil
- Rozetta soils, which have a light-colored surface layer

Dissimilar soils:
- The somewhat poorly drained Clarksdale soils, which have more clay in the subsoil than the Greenbush soil; in the slightly lower positions on the landform
- The somewhat poorly drained Timewell and Ipava soils, which have more clay in the subsoil than the Greenbush soil and have a thicker dark surface soil; on broad summits

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

675C2—Greenbush silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Greenbush soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Greenbush and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 72 inches
- Osco soils, which have a thicker dark surface soil than that of the Greenbush soil
- Rozetta soils, which have a light-colored surface layer

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have a light-colored surface layer and have more sand in the lower part of the subsoil than the Greenbush soil; in areas downslope from the Greenbush soil
- The somewhat poorly drained Emery soils, which have more sand in the lower part of the subsoil than the Greenbush soil; in areas downslope from the Greenbush soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Haymond Series

Taxonomic classification: Coarse-silty, mixed, superactive, mesic Fluventic Dystrudepts

Typical Pedon for MLRA 115C

Haymond silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 525 feet; 715 feet south and 2,480 feet east of the northwest corner of sec. 15, T. 2 N., R. 8 W.; USGS Tioga, Illinois, topographic quadrangle; lat. 40 degrees 9 minutes 52 seconds N. and long. 91 degrees 18 minutes 26 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common fine and few very fine roots; neutral; abrupt smooth boundary.

Bw1—7 to 14 inches; brown (10YR 4/3) silt loam;

moderate fine granular structure; friable; common fine and many very fine roots; neutral; clear smooth boundary.

Bw2—14 to 25 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; common very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; neutral; gradual wavy boundary.

Bw3—25 to 39 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; few fine and common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; neutral; gradual wavy boundary.

Bw4—39 to 58 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; few fine and common very fine roots; neutral; clear wavy boundary.

Bw5—58 to 69 inches; brown (10YR 4/3) silt loam; weak medium granular structure; friable; few fine and common very fine roots; neutral; clear wavy boundary.

C—69 to 86 inches; brown (10YR 5/3) silt loam; massive; friable; few fine and common very fine roots; neutral.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 30 to 70 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silt

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

C horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam, fine sandy loam, sandy loam, or loam
Content of rock fragments—0 to 5 percent

3331A—Haymond silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Haymond and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• The moderately well drained Blyton soils in positions on the landform similar to those of the Haymond soil
• Soils that have a buried soil

Dissimilar soils:
• Drury soils, which have more clay in the upper part than the Haymond soil; in the higher positions on footslopes
• Elsah soils, which have rock fragments throughout
• Soils that have carbonates throughout
• Soils that have more sand throughout than the Haymond soil
• The poorly drained Twomile soils, which have more clay in the upper part than the Haymond soil; in the slightly higher positions
• The somewhat poorly drained Wakeland soils in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Hickory Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Hickory silt loam, 35 to 60 percent slopes, at an elevation of 565 feet; 1,935 feet north and 2,130 feet west of the southeast corner of sec. 27, T. 18 N., R. 9 W.; USGS Ashland, Illinois, topographic quadrangle; lat. 39 degrees 58 minutes 47.5 seconds N. and long. 90 degrees 5 minutes 38 seconds W., NAD 27:

A1—0 to 1 inch; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many very fine roots; slightly acid; abrupt smooth boundary.

A2—1 to 4 inches; 90 percent dark grayish brown (10YR 4/2) and 10 percent brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine subangular blocky and weak fine granular structure; friable; many very fine roots; moderately acid; abrupt smooth boundary.

E—4 to 8 inches; brown (10YR 5/3) loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; common fine distinct very pale brown (10YR 8/2) clay depletions between peds; 3 percent gravel; strongly acid; abrupt smooth boundary.

BE—8 to 12 inches; yellowish brown (10YR 5/4) loam, light gray (10YR 7/2) dry; moderate very fine and fine subangular blocky structure; friable; few very fine roots; very few faint brown (10YR 5/3) and very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; common fine distinct very pale brown (10YR 8/2) clay depletions between peds; 3 percent gravel; strongly acid; clear smooth boundary.

Bt1—12 to 22 inches; yellowish brown (10YR 5/4) clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; common faint dark yellowish brown (10YR 4/4) clay films and common distinct very pale brown (10YR 7/3) silt coats on faces of peds; 5 percent gravel; very strongly acid; clear smooth boundary.

Bt2—22 to 29 inches; yellowish brown (10YR 5/4) clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; many faint dark yellowish brown (10YR 4/4) clay films and few distinct very pale brown (10YR 7/3) silt coats on faces of peds; 5 percent gravel; strongly acid; clear smooth boundary.

Bt3—29 to 40 inches; yellowish brown (10YR 5/4) clay loam; moderate medium prismatic and moderate medium subangular blocky structure; firm; few very fine roots; many distinct brown (7.5YR 4/4) clay films and very few distinct very pale brown (10YR 7/3) silt coats on faces of peds; 5 percent gravel; moderately acid; clear smooth boundary.

Bt4—40 to 53 inches; yellowish brown (10YR 5/6) clay loam; weak medium prismatic and weak medium and coarse subangular blocky structure; firm; few very fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; few prominent fine black (10YR 2/1) masses of iron and manganese accumulation throughout; 5 percent gravel; moderately acid; gradual smooth boundary.

BCt—53 to 58 inches; yellowish brown (10YR 5/6) loam; weak medium prismatic and weak medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation and common distinct brown (10YR 5/3) iron depletions throughout; 5 percent gravel; neutral; gradual smooth boundary.

C—58 to 63 inches; yellowish brown (10YR 5/6) loam; massive; firm; very few distinct brown (7.5YR 4/4) clay films in root channels and/or pores; few prominent fine black (10YR 2/1) masses of iron and manganese accumulation and many fine distinct light brownish gray (2.5Y 6/2) iron depletions throughout; 3 percent gravel; slightly alkaline.

MLRA Series Range in Characteristics

Thickness of the loess: 0 to 20 inches
Depth to carbonates (if they occur): More than 40 inches
Depth to base of diagnostic horizon: More than 40 inches
Slope range: 18 to 60 percent

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 to 5
Chroma—2 to 4
Texture—silt loam, loam, clay loam, or silty clay loam
Content of rock fragments—0 to 5 percent

E horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, silty clay loam, loam, or gravelly silt loam
Content of rock fragments—0 to 20 percent

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 to 7
Chroma—1 to 8

Texture—loam, clay loam, or sandy loam
Content of rock fragments—2 to 20 percent

8E2—Hickory loam, 18 to 25 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Glacial till
Special feature: The Hickory soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Severely eroded soils that have more clay in the surface layer than the Hickory soil
- Ursa soils, which have more clay in the subsoil than the Hickory soil

Dissimilar soils:
- Marseilles soils, which formed in shale; in areas downslope from the Hickory soil
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

8F—Hickory silt loam, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Ursa soils, which have more clay in the subsoil than the Hickory soil

Dissimilar soils:
- Marseilles soils, which formed in shale; in areas downslope from the Hickory soil
- Lacrescent soils, which formed in limestone colluvium; in areas downslope from the Hickory soil
- Rozetta soils, which have less sand in the subsoil than the Hickory soil; in areas upslope from the Hickory soil
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

8G—Hickory silt loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Ursa soils, which have more clay in the subsoil than the Hickory soil

Dissimilar soils:
• Marseilles soils, which formed in shale; in areas downslope from the Hickory soil
• Rozetta soils, which have less sand in the subsoil than the Hickory soil; in areas upslope from the Hickory soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Huntsville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon for MLRA 115C

Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 480 feet; 145 feet west and 936 feet north of the southeast corner of sec. 35, T. 2 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 6 minutes 47 seconds N. and long. 91 degrees 24 minutes 32 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure parting to moderate medium granular; friable; few very fine roots; slightly acid; clear smooth boundary.

A1—10 to 20 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium subangular blocky structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—20 to 27 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; many faint very dark brown (10YR 2/2) organic coats on faces of peds; slightly acid; clear smooth boundary.

A3—27 to 32 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coats on faces of peds; slightly acid; clear smooth boundary.

AC—32 to 42 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak coarse subangular blocky structure; friable; few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; slightly acid; gradual smooth boundary.

C—42 to 56 inches; brown (10YR 4/3) silt loam; massive; friable; few faint dark brown (10YR 3/3) organic coats in root channels and/or pores; slightly acid; clear smooth boundary.

Ab—56 to 80 inches; dark yellowish brown (10YR 3/4) silt loam; weak medium subangular blocky structure; firm; common distinct light gray (10YR 7/1) silt coats and common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 24 to 54 inches
Depth to base of diagnostic horizon: 24 to 57 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or loam

C horizon:
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam (loam or strata of very fine sandy loam below a depth of 40 inches in some pedons)

8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Huntsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Ross soils, which have more sand throughout than the Huntsville soil
- Soils that are subject to frequent flooding

Dissimilar soils:
- The poorly drained Beaucoup soils, which have more clay in the upper part than the Huntsville soil; in the lower positions on the landform
- The somewhat poorly drained Lawson soils in the slightly lower positions on the landform
- Worthen soils, which are not subject to flooding; in the slightly higher positions

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon for MLRA 115C

Ipava silt loam, in an area of Timewell and Ipava soils, 0 to 2 percent slopes, at an elevation of 690 feet; 500 feet west and 2,800 feet south of the northeast corner of sec. 9, T. 2 N., R. 5 W.; USGS Augusta, Illinois, topographic quadrangle; lat. 40 degrees 10 minutes 16.7 seconds N. and long. 90 degrees 58 minutes 22 seconds W., NAD 27:

Ap—0 to 9 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium subangular blocky structure parting to weak fine granular; friable; common very fine and fine roots; few very fine pores; neutral; abrupt smooth boundary.

A—9 to 14 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium subangular blocky structure parting to moderate fine granular; friable; common fine roots; few very fine pores; common distinct black (10YR 2/1) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

BA—14 to 19 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common fine roots; few very fine pores; common distinct black (10YR 2/1) organo-clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct grayish brown (2.5Y 5/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bt—19 to 32 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common fine roots; few very fine pores; common distinct dark gray (10YR 4/1) clay films and few prominent black (10YR 2/1) organo-clay films on faces of peds and in pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Btg1—32 to 41 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many very fine pores; few prominent dark gray (10YR 4/1) clay films throughout and common prominent black (10YR 2/1) organo-clay films on faces of peds and in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine distinct very dark grayish brown (2.5Y 3/2) iron and manganese concretions throughout, and common fine and medium light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Btg2—41 to 48 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; many very fine pores; few faint dark gray (10YR 4/1) clay films in root channels and/or pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, few fine distinct very dark grayish brown (2.5Y 3/2) iron and manganese concretions throughout, and common medium faint light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

BCg1—48 to 57 inches; grayish brown (2.5Y 5/2) silt loam; weak coarse prismatic structure; friable;

common very fine pores; few faint dark gray (10YR 4/1) clay films in root channels and/or pores; common fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine faint very dark grayish brown (2.5Y 3/2) iron and manganese concretions throughout, and common fine faint light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

BCg2—57 to 69 inches; grayish brown (2.5Y 5/2) silt loam; moderate coarse prismatic structure; friable; few very fine pores; common faint dark gray (10YR 4/1) clay films on faces of peds and in pores; few fine faint very dark grayish brown (2.5Y 3/2) iron and manganese concretions throughout, common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, and common fine distinct light gray (10YR 7/2) iron depletions throughout; moderately acid; clear smooth boundary.

C—69 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; many very fine pores; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine distinct light gray (10YR 7/2) iron depletions throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates (if they occur): More than 40 inches
Depth to base of diagnostic horizon: 40 to 70 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silty clay loam, silty clay, or silt loam

Cg or C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam or silty clay loam

855A—Timewell and Ipava soils, 0 to 2 percent slopes

Setting

Landform: Drainage divides
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Timewell and Ipava soils and similar soils: 90 percent
Dissimilar soils: 10 percent
Note: A single area of this map unit may consist of either the Timewell or Ipava soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Similar soils:
• Clarksdale soils, which have a thinner dark surface layer than that of the Timewell and Ipava soils

Dissimilar soils:
• The well drained Osco soils, which have less clay in the subsoil than the Timewell and Ipava soils; in the higher positions on the landform
• The poorly drained Rubio soils, which have a thinner dark surface soil than that of the Timewell and Ipava soils; in the slightly lower positions on the landform
• The poorly drained Virden soils in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

855B—Timewell and Ipava soils, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Ipava soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Timewell and Ipava soils and similar soils: 90 percent
Dissimilar soils: 10 percent
Note: A single area of this map unit may consist of either the Timewell or Ipava soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Similar soils:
• Clarksdale soils, which have a thinner dark surface layer than that of the Timewell and Ipava soils

Dissimilar soils:
• The well drained Greenbush soils, which have a thinner dark surface soil than that of the Timewell and Ipava soils and have less clay in the subsoil; in the higher positions on the landform
• Emery soils, which have a thinner dark surface soil than that of the Timewell and Ipava soils and have less clay in the subsoil; in areas downslope from the Timewell and Ipava soils
• Keller soils, which have more clay in the lower part of the subsoil than the Timewell and Ipava soils; in areas downslope from the Timewell and Ipava soils
• The well drained Osco soils, which have less clay in the subsoil than the Timewell and Ipava soils; in the higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Keller Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Taxadjunct features: The Keller soils in map units 470B2 and 470C2 have a thinner dark surface soil than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Aquollic Hapludalfs.

Typical Pedon for MLRA 115C (Official Series Description)

Keller silt loam, 5 to 10 percent slopes, at an elevation of 736 feet; 2,460 feet north and 980 feet east of the southwest corner of sec. 9, T. 1 S., R. 4 W.; USGS Mt. Sterling, Illinois, topographic quadrangle; lat. 39 degrees 59 minutes 41.2 seconds N. and long. 90 degrees 52 minutes 13.6 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common fine roots throughout; slightly acid; clear smooth boundary.
A—8 to 15 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common fine roots throughout; moderately acid; clear smooth boundary.
BA—15 to 19 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common fine roots throughout; common fine continuous tubular pores; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine faint brown (10YR 5/3) masses of iron accumulation throughout; slightly acid; clear smooth boundary.
Btg1—19 to 24 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine subangular blocky structure; friable; common fine roots throughout; common fine continuous tubular pores; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint brown (10YR 5/3) masses of iron accumulation and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

2Btg2—24 to 33 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium subangular blocky structure; firm; few fine roots throughout; few fine continuous tubular pores; many distinct dark gray (10YR 4/1) clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium faint black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

2Btg3—33 to 51 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure; firm; few fine roots in cracks; few fine constricted tubular pores; many distinct dark gray (10YR 4/1) clay films on faces of peds; many fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation throughout, common fine faint black (2.5Y 2/1) iron and manganese concretions throughout, and common fine prominent white (10YR 8/1) masses of barite throughout; slightly acid; clear smooth boundary.

2Btg4—51 to 61 inches; gray (10YR 5/1) silty clay loam; weak coarse prismatic structure; firm; few fine roots in cracks; few fine constricted tubular pores; common distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; many fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation throughout, common fine distinct white (10YR 8/1) masses of barite throughout, and common fine faint black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

2BCg—61 to 80 inches; gray (10YR 5/1) silty clay loam; very weak coarse prismatic structure; firm; common fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation and common fine distinct white (10YR 8/1) masses of barite throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 20 to 40 inches
Depth to base of diagnostic horizon: 50 to 70 inches
Slope range: 2 to 10 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Btg or 2Bt horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 3
Texture—silty clay loam, clay loam, clay, or silty clay

470B2—Keller silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till
Special feature: The Keller soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Keller and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Emery soils, which have less clay in the lower part of the subsoil than the Keller soil; in areas upslope from the Keller soil
• Fishhook soils, which have a light-colored surface layer

Dissimilar soils:
• The well drained Greenbush soils, which have less clay in the lower part of the subsoil than the Keller soil; in areas upslope from the Keller soil
• The well drained Osco soils, which have less clay in the lower part of the subsoil than the Keller soil and have a thicker dark surface soil; in areas upslope from the Keller soil
• Timewell and Ipava soils, which have a thicker dark surface soil than that of the Keller soil and have less clay in the lower part of the subsoil; in areas upslope from the Keller soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

470C—Keller silt loam, 5 to 10 percent slopes

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keller and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Emery soils, which have a thinner dark surface layer than that of the Keller soil and have less clay in the lower part of the subsoil; in areas upslope from the Keller soil
- Fishhook soils, which have a light-colored surface layer

Dissimilar soils:
- The well drained Greenbush soils, which have less clay in the lower part of the subsoil than the Keller soil and have a thinner dark surface layer; in areas upslope from the Keller soil
- The well drained Osco soils, which have less clay in the lower part of the subsoil than the Keller soil; in areas upslope from the Keller soil
- Timewell and Ipava soils, which have less clay in the lower part of the subsoil than the Keller soil; in areas upslope from the Keller soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

470C2—Keller silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess and the underlying paleosol formed in glacial till
Special feature: The Keller soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keller and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Emery soils, which have less clay in the lower part of the subsoil than the Keller soil; in areas upslope from the Keller soil
- Soils that have a thicker dark surface soil than that of the Keller soil

Dissimilar soils:
- Atlas soils, which have more clay in the upper part of the subsoil than the Keller soil and have a light-colored surface layer; in areas downslope from the Keller soil
- The poorly drained Coatsburg soils, which have a thicker dark surface soil than that of the Keller soil and have more clay in the upper part of the subsoil; in areas downslope from the Keller soil
- Greenbush soils, which have less clay in the lower part of the subsoil than the Keller soil; in areas upslope from the Keller soil
- Lawson soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section

- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon for MLRA 115C

Keomah silt loam, 0 to 2 percent slopes, at an elevation of 655 feet; 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; lat. 40 degrees 11 minutes 22 seconds N. and long. 91 degrees 12 minutes 11 seconds W., NAD 27:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few distinct brown (7.5YR 4/4) masses of iron accumulation throughout; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common fine roots; few faint dark grayish brown (10YR 4/2) organic coats on faces of peds and in pores; few distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, few distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, and few faint light gray (10YR 7/2) clay depletions throughout; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, common distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few faint grayish brown (10YR 5/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds and few faint pressure faces; common distinct black (2.5Y 2/1) masses of iron and manganese accumulation and many distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, common distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bt4—44 to 51 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; few distinct black (2.5Y 2/1) masses of iron and manganese accumulation and many distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

BC1—51 to 63 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common prominent very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many distinct strong brown (7.5YR 5/6) masses of iron accumulation and few distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; clear smooth boundary.

BC2—63 to 76 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; common prominent very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; few distinct black (2.5Y 2/1) masses of iron and manganese accumulation and many distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

C—76 to 89 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; few faint strong brown (7.5YR 5/6) masses of iron accumulation throughout, few prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common distinct light brownish gray (10YR 6/2) iron depletions throughout; slightly acid.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 40 to 76 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silt loam

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Clarksdale soils, which have a darker surface layer than that of the Keomah soil
- Soils on terraces

Dissimilar soils:
- The poorly drained Rushville soils in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

17B—Keomah silt loam, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Keomah soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Bunkum soils, which have more sand in the lower part of the subsoil than the Keomah soil; in areas downslope from the Keomah soil
- Clarksdale soils, which have a darker surface layer than that of the Keomah soil
- Passport soils, which have less clay and more sand in the subsoil than the Keomah soil; in areas downslope from the Keomah soil
- Soils on terraces

Dissimilar soils:
- Fishhook soils, which have more clay in the lower part of the subsoil than the Keomah soil; in areas downslope from the Keomah soil
- Rozetta and Winfield soils, which have less clay in the subsoil than the Keomah soil

Management

For general and detailed information about

managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Keswick Series

Taxonomic classification: Fine, smectitic, mesic Aquertic Chromic Hapludalfs

Taxadjunct features: The Keswick soils in this survey area have gray colors at a lower depth than is defined as the range for the series. This difference does not significantly affect the use and management of the soils. These soils are classified as fine, smectitic, mesic Oxyaquic Hapludalfs.

Typical Pedon for MLRA 115C

Keswick loam, 18 to 25 percent slopes, eroded, at an elevation of 650 feet; 2,550 feet west and 900 feet north of the southeast corner of sec. 24, T. 2 N., R. 8 W.; USGS Tioga, Illinois, topographic quadrangle; lat. 40 degrees 8 minutes 28.7 seconds N. and long. 91 degrees 16 minutes 8.5 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; many fine and medium roots throughout; many very fine and fine tubular pores; neutral; clear smooth boundary.

Bt1—8 to 12 inches; 75 percent strong brown (7.5YR 4/6) and 25 percent reddish brown (5YR 5/4) silty clay loam; weak fine subangular blocky structure; friable; common fine and medium roots throughout; many fine and medium tubular pores; slightly acid; clear smooth boundary.

2Bt2—12 to 16 inches; yellowish red (5YR 5/6) silty clay; weak fine subangular blocky structure; firm; common fine and medium roots throughout; many fine and medium tubular pores; few distinct reddish brown (5YR 5/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—16 to 21 inches; brown (7.5YR 5/4) silty clay; weak fine prismatic structure; firm; common fine and medium roots throughout; many fine and medium tubular pores; few distinct reddish brown (5YR 5/4) clay films on faces of peds; common fine prominent yellowish red (5YR 5/6) masses of iron accumulation throughout; 1 percent subangular gravel; strongly acid; clear smooth boundary.

2Bt4—21 to 28 inches; brown (7.5YR 5/4) silty clay; weak fine prismatic structure; firm; common fine and medium roots throughout; many fine and medium tubular pores; few distinct reddish brown (5YR 5/4) clay films on faces of peds; common fine prominent yellowish red (5YR 5/6) masses of iron accumulation between peds; 1 percent subangular gravel; strongly acid; clear smooth boundary.

2Bt5—28 to 39 inches; yellowish brown (10YR 5/6) clay loam; weak medium prismatic structure; firm; few fine and medium roots throughout; few distinct brown (7.5YR 5/3) clay films on faces of peds; common fine prominent black (7.5YR 2/1) masses of manganese accumulation between peds; 1 percent subangular gravel; strongly acid; clear smooth boundary.

2Bt6—39 to 47 inches; yellowish brown (10YR 5/6) clay loam; weak fine prismatic structure; firm; few fine and medium roots throughout; few distinct brown (7.5YR 5/2) clay films on faces of peds and in pores and few distinct brown (7.5YR 5/3) clay films on faces of peds; common fine distinct black (7.5YR 2/1) masses of manganese accumulation between peds; 3 percent subangular gravel; moderately acid; clear smooth boundary.

2BC—47 to 52 inches; brown (7.5YR 5/4) clay loam; weak medium prismatic structure; firm; few very fine roots throughout; few distinct brown (7.5YR 5/2) clay films in root channels and/or pores; common fine distinct strong brown (7.5YR 5/8) masses of iron accumulation and many fine distinct black (7.5YR 2/1) masses of manganese accumulation throughout; 3 percent subangular gravel; moderately acid; clear smooth boundary.

2Cg—52 to 60 inches; grayish brown (10YR 5/2) clay loam; massive; firm; 1 percent subangular gravel; moderately acid.

MLRA Series Range in Characteristics

Depth to carbonates: 42 to 75 inches
Depth to base of diagnostic horizon: 42 to 75 inches
Slope range: 5 to 25 percent

Ap or A horizon:
Hue—10YR
Value—2 to 4
Chroma—1 or 2
Texture—clay loam, silt loam, or loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—clay loam, silt loam, or loam

2Bt horizon:
Hue—5YR, 7.5YR, 10YR, or 5Y
Value—4 or 5
Chroma—1 to 6
Texture—clay loam, clay, or silty clay

651C2—Keswick loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Side slopes and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keswick and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lindley soils, which have less clay in the subsoil than the Keswick soil; in the more sloping positions on the landform
- Severely eroded soils that have more clay in the surface layer than the Keswick soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less clay than the Keswick soil; in areas upslope from the Keswick soil
- El Dara soils, which have less clay in the subsoil than the Keswick soil; in areas downslope from the Keswick soil
- Soils that are somewhat poorly drained
- The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

651C3—Keswick clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Side slopes and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Paleosol formed in glacial till
Special feature: The Keswick soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keswick and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lindley soils, which have less clay in the subsoil than the Keswick soil; in the more sloping positions on the landform
- Moderately eroded soils that have less clay in the surface layer than the Keswick soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less clay than the Keswick soil; in areas upslope from the Keswick soil
- El Dara soils, which have less clay in the subsoil than the Keswick soil; in areas downslope from the Keswick soil
- Soils that are somewhat poorly drained
- Soils that have more sand throughout than the Keswick soil
- The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section

- “Engineering” section
- “Soil Properties” section

651D2—Keswick loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Keswick and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lindley soils, which have less clay in the subsoil than the Keswick soil; in the more sloping positions on the landform
- Severely eroded soils that have more clay in the surface layer than the Keswick soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less clay than the Keswick soil; in areas upslope from the Keswick soil
- El Dara soils, which have less clay in the subsoil than the Keswick soil; in areas downslope from the Keswick soil
- Marseilles soils, which have shale in the lower part; in areas downslope from the Keswick soil
- Soils that are somewhat poorly drained
- The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

651D3—Keswick clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Paleosol formed in glacial till
Special feature: The Keswick soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Keswick and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lindley soils, which have less clay in the subsoil than the Keswick soil; in the more sloping positions on the landform
- Moderately eroded soils that have less clay in the surface layer than the Keswick soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have less clay than the Keswick soil; in areas upslope from the Keswick soil
- El Dara soils, which have less clay in the subsoil than the Keswick soil; in areas downslope from the Keswick soil
- Marseilles soils, which have shale in the lower part; in areas downslope from the Keswick soil
- Soils that are somewhat poorly drained
- Soils that have more sand throughout than the Keswick soil
- The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

651E2—Keswick loam, 18 to 25 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Keswick and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Lindley soils, which have less clay in the subsoil than the Keswick soil
• Severely eroded soils that have more clay in the surface layer than the Keswick soil

Dissimilar soils:
• The somewhat poorly drained Bunkum soils, which have less clay than the Keswick soil; in areas upslope from the Keswick soil
• El Dara soils, which have less clay in the subsoil than the Keswick soil; in areas downslope from the Keswick soil
• Marseilles soils, which have shale in the lower part; in areas downslope from the Keswick soil
• The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Lacrescent Series

Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls

Typical Pedon for MLRA 115C

Lacrescent channery silt loam, 35 to 60 percent slopes, at an elevation of 580 feet; 2,600 feet east and 1,550 feet south of the northwest corner of sec. 31, T. 4 S., R. 6 W.; USGS Hull, Illinois, topographic quadrangle; lat. 39 degrees 40 minutes 42 seconds N. and long. 91 degrees 8 minutes 20 seconds W., NAD 27:

A1—0 to 7 inches; very dark gray (10YR 3/1) channery silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; many fine and few coarse roots throughout; strongly effervescent; 30 percent channers and 5 percent flagstones; slightly alkaline; clear wavy boundary.
A2—7 to 21 inches; very dark gray (10YR 3/1) gravelly silt loam, gray (10YR 5/1) dry; moderate medium subangular blocky structure parting to moderate medium granular; friable; common medium and few coarse roots throughout; strongly effervescent; 30 percent gravel; slightly alkaline; gradual wavy boundary.
Bw—21 to 38 inches; dark brown (10YR 3/3) very gravelly silt loam, brown (10YR 5/3) dry; moderate medium subangular blocky structure; friable; common medium and few coarse roots throughout; many distinct dark brown (10YR 3/3) organic coats on faces of peds; violently effervescent; 40 percent gravel; moderately alkaline; gradual wavy boundary.
C—38 to 60 inches; dark yellowish brown (10YR 4/4) very flaggy silt loam; massive; friable; common medium roots throughout; common distinct dark brown (10YR 3/3) organic coats in root channels and/or pores; violently effervescent; 30 percent flagstones and 25 percent channers; moderately alkaline.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 21 inches
Depth to lithic contact: More than 42 inches
Depth to carbonates: 0 to 36 inches
Depth to base of diagnostic horizon: 20 to 38 inches
Slope range: 35 to 60 percent

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam, loam, or silty clay loam
Content of rock fragments—0 to 70 percent

Bw horizon:
Hue—10YR
Value—4
Chroma—3 or 4
Texture—loam, fine sandy loam, sandy loam, or silt loam

Content of rock fragments—35 to 70 percent

C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—loam, fine sandy loam, or silt loam
Content of rock fragments—35 to 70 percent

785G—Lacrescent channery silt loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Colluvium (fig. 4)

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Lacrescent soil: 90 percent
Dissimilar components: 10 percent

Dissimilar components:
- Elsah soils on flood plains along drainageways
- Marseilles soils, which have shale in the lower part; in areas upslope from the Lacrescent soil
- Outcrops of limestone bedrock; on shoulders

Figure 4.—A forested area of Lacrescent soils. These soils formed in limestone colluvium.

• Lindley soils, which have a lower content of rock fragments throughout than the Lacrescent soil and have a light-colored surface layer; in areas upslope from the Lacrescent soil
• Orthents in the less sloping areas where the soils have been altered by human activities
• Stookey soils, which do not have rock fragments; in areas upslope from the Lacrescent soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Lamont Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Lamont sandy loam, 35 to 60 percent slopes, at an elevation of 640 feet; 400 feet east and 1,300 feet south of the northwest corner of sec. 24, T. 2 S., R. 5 W.; USGS Kellerville, Illinois, topographic quadrangle; lat. 39 degrees 52 minutes 34 seconds N. and long. 90 degrees 56 minutes 3 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) sandy loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; very friable; common fine roots throughout; slightly acid; clear smooth boundary.

E—3 to 6 inches; brown (10YR 5/3) fine sandy loam, very pale brown (10YR 7/3) dry; weak fine granular structure; very friable; common fine roots throughout; very few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; moderately acid; clear smooth boundary.

Bt1—6 to 11 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots throughout; few faint dark yellowish brown (10YR 4/4) clay films between sand grains; moderately acid; clear smooth boundary.

Bt2—11 to 24 inches; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots throughout; common distinct yellowish brown (10YR 5/4) clay bridges between sand grains; many fine and medium distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout; strongly acid; clear smooth boundary.

Bt3—24 to 32 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots throughout; common distinct yellowish brown (10YR 5/4) clay bridges between sand grains; common fine distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout; strongly acid; clear smooth boundary.

Bt4—32 to 45 inches; yellowish brown (10YR 5/6) loamy sand; weak medium subangular blocky structure; friable; few fine roots throughout; few distinct yellowish brown (10YR 5/4) clay bridges between sand grains; strongly acid; clear smooth boundary.

Bt5—45 to 50 inches; strong brown (7.5YR 5/6) sandy clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots throughout; many distinct brown (7.5YR 5/4) clay films between sand grains; strongly acid; clear smooth boundary.

C—50 to 80 inches; strong brown (7.5YR 5/6) sandy clay loam and loamy sand; single grain; friable; strongly acid.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 30 to 60 inches
Slope range: 18 to 60 percent

A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—fine sandy loam, sandy loam, or loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—fine sandy loam or loamy fine sand

Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—fine sandy loam, loam, sandy clay loam, loamy sand, or sandy loam

2E and Bt horizon (if it occurs):
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—5 or 6
Texture—fine sandy loam, loamy fine sand, loamy sand, or sand

C or 2C horizon:
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—5 or 6
Texture—fine sandy loam, loam, sandy clay loam, or loamy sand

175F—Lamont sandy loam, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Eolian deposits

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Lamont and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have more sand throughout than the Lamont soil

Dissimilar soils:
- Bunkum soils, which have more clay throughout than the Lamont soil; in the higher, less sloping positions on the landform
- El Dara soils, which have more clay in the subsoil than the Lamont soil
- Marseilles soils, which formed in shale; in areas downslope from the Lamont soil
- Keswick and Lindley soils, which have more clay throughout than the Lamont soil; in areas upslope from the Lamont soil
- Winfield and Menfro soils, which have less sand throughout than the Lamont soil; on the higher, less sloping summits

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

175G—Lamont sandy loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Eolian deposits

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Lamont and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have more sand throughout than the Lamont soil

Dissimilar soils:
- Bunkum soils, which have more clay throughout than the Lamont soil; in the higher, less sloping positions on the landform
- El Dara soils, which have more clay in the subsoil than the Lamont soil
- Marseilles soils, which formed in shale; in areas downslope from the Lamont soil
- Keswick and Lindley soils, which have more clay throughout than the Lamont soil; in areas upslope from the Lamont soil
- Winfield and Menfro soils, which have less sand throughout than the Lamont soil; on the higher, less sloping summits

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Lawson Series

Taxonomic classification: Fine-silty, mixed, mesic Aquic Cumulic Hapludolls

Typical Pedon for MLRA 115C

Lawson silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 685 feet; 1,900 feet east and 265 feet south of the northwest corner of sec. 3, T. 1 S., R. 5 W.; USGS Clayton, Illinois, topographic quadrangle; lat. 40 degrees 1 minute 5 seconds N. and long. 90 degrees 57 minutes 53 seconds W., NAD 27:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

A1—6 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common fine roots; neutral; clear smooth boundary.

A2—14 to 22 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common fine roots; common fine faint brown (10YR 4/3) masses of iron accumulation throughout; neutral; clear smooth boundary.

A3—22 to 33 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common fine roots; common fine faint brown (10YR 4/3) masses of iron accumulation throughout; neutral; clear smooth boundary.

C1—33 to 40 inches; stratified, 70 percent very dark grayish brown (10YR 3/2) and 20 percent dark brown (10YR 3/3) silt loam; massive; friable; common fine roots; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C2—40 to 56 inches; stratified, 60 percent very dark grayish brown (10YR 3/2) and 30 percent dark brown (10YR 3/3) silt loam; massive; friable; few fine roots; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C3—56 to 75 inches; stratified, 80 percent very dark grayish brown (10YR 3/2) and 10 percent dark brown (10YR 3/3) silt loam; massive; friable; few fine roots; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation between peds, common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation between peds, and many medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C4—75 to 80 inches; stratified, 80 percent dark grayish brown (10YR 4/2) and 10 percent very dark grayish brown (10YR 3/2) silt loam; massive; friable; common medium and coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, and common fine faint dark gray (10YR 4/1) iron depletions throughout; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

C horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—stratified silt loam or silty clay loam

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Soils that have a buried soil at a depth of 20 to 40 inches

• Wakeland soils, which have a light-colored surface layer and have less clay in the upper part than the Lawson soil

Dissimilar soils:
• The moderately well drained Blyton soils, which have a light-colored surface layer and have less clay in the upper part than the Lawson soil; in the slightly higher positions on the landform
• Soils that are poorly drained
• Soils that have more sand throughout than the Lawson soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Riley soils, which have a thinner dark surface soil than the Lawson soil and have more sand throughout
• Soils that have a buried soil at a depth of 20 to 40 inches
• Tice soils, which have a thinner dark surface soil than that of the Lawson soil
• Wakeland soils, which have a light-colored surface soil and have less clay in the upper part than the Lawson soil

Dissimilar soils:
• The moderately well drained Blyton soils, which have a light-colored surface soil; in the slightly higher positions on the landform
• The well drained Huntsville soils in the slightly higher positions on the landform
• The well drained Ross soils, which have more sand throughout than the Lawson soil; in the slightly higher positions on the landform
• The poorly drained Vesser soils, which have a gray subsurface layer; in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Lenzburg Series

Taxonomic classification: Fine-loamy, mixed, active, calcareous, mesic Alfic Udarents
Taxadjunct features: The Lenzburg soils in this survey area are more acid in the upper part of the profile than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, active, nonacid, mesic Alfic Udarents.

Typical Pedon for MLRA 115C

Lenzburg silty clay loam, 20 to 60 percent slopes, at an elevation of 680 feet; 50 feet south and 1,420 feet west of the northeast corner of sec. 36, T. 2 N., R. 1 W.; USGS Beardstown, Illinois, topographic quadrangle; lat. 40 degrees 7 minutes 0 seconds N. and lat. 90 degrees 27 minutes 29 seconds W., NAD 27:

A—0 to 5 inches; very dark grayish brown (2.5Y 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; very firm; many very fine and fine roots throughout; few fine distinct black (10YR 2/1) iron and manganese concretions throughout; 12 percent coal fragments; slightly alkaline; abrupt smooth boundary.
C1—5 to 16 inches; brown (10YR 4/3) silty clay loam,

dark yellowish brown (10YR 4/4) dry; massive; firm; many very fine and fine roots throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct grayish brown (10YR 5/2) clay depletions between peds; 20 percent coal fragments occurring as a stratum 1 inch thick; neutral; clear smooth boundary.

C2—16 to 23 inches; 48 percent brown (10YR 4/3) and 30 percent grayish brown (10YR 5/2) clay loam; massive with pockets of structured B material; firm; common very fine and fine roots throughout; many medium dark faint yellowish brown (10YR 4/4) masses of iron accumulation and few fine faint brown (10YR 4/3) iron and manganese concretions between peds; neutral; clear smooth boundary.

C3—23 to 27 inches; gray (10YR 5/1) silty clay loam; massive; firm; common very fine and fine roots in cracks; common medium distinct brown (10YR 4/3) masses of iron accumulation between peds, common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation between peds, and few fine faint grayish brown (10YR 5/2) iron depletions between peds; 2 percent fine gravel; slightly alkaline; clear smooth boundary.

C4—27 to 38 inches; yellowish brown (10YR 5/4) clay loam; massive; friable; common very fine roots in cracks; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation between peds; 3 percent fine gravel and 8 percent coal fragments; slightly alkaline; clear smooth boundary.

C5—38 to 60 inches; yellowish brown (10YR 5/4) clay loam; massive; very friable; common very fine roots in cracks; common medium distinct gray (10YR 5/1) iron depletions between peds and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; 4 percent fine gravel and 5 percent coal fragments; slightly alkaline.

MLRA Series Range in Characteristics

Depth to paralithic or lithic contact: More than 60 inches
Slope range: 20 to 60 percent

Ap or A horizon:
Hue—10YR, 2.5Y, or 5Y
Value—2 to 5
Chroma—1 to 6
Texture—silt loam, silty clay loam, clay loam, or loam
Content of rock fragments—10 to 25 percent

C horizon:
Hue—7.5YR or 10YR
Value—2 to 6
Chroma—1 to 4
Texture—silty clay loam, silt loam, loam, silty clay, or clay loam
Content of rock fragments—0 to 25 percent

871G—Lenzburg silty clay loam, 20 to 60 percent slopes

Setting

Landform: Spoil banks
Position on the landform: Backslopes

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Cast overburden from surface mining

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Lenzburg and similar soils: 90 percent
Dissimilar components: 10 percent

Similar soils:
- Soils that have slopes of less than 20 percent

Dissimilar components:
- Areas of undisturbed soils
- Lawson soils on undisturbed flood plains along drainageways
- Pools of water less than 3 acres in size

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Lindley Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Lindley loam, 18 to 35 percent slopes, at an elevation of 615 feet; 2,200 feet east and 1,980 feet north of the

southwest corner of sec. 2, T. 2 S., R. 8 W.; USGS Quincy East, Illinois, topographic quadrangle; lat. 39 degrees 55 minutes 26 seconds N. and long. 91 degrees 17 minutes 40 seconds W., NAD 27:

A—0 to 6 inches; dark grayish brown (10YR 4/2) loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few very fine roots throughout; 1 percent gravel; strongly acid; abrupt smooth boundary.

BE—6 to 12 inches; yellowish brown (10YR 5/4) loam; weak thick platy structure parting to moderate fine subangular blocky; friable; few very fine roots throughout; common distinct dark grayish brown (10YR 4/2) organic coats on faces of peds; 1 percent gravel; strongly acid; clear smooth boundary.

Bt1—12 to 22 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure parting to weak medium subangular blocky; firm; few very fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; 1 percent gravel; strongly acid; gradual smooth boundary.

Bt2—22 to 31 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common distinct brown (10YR 5/3) clay films on faces of peds; 1 percent gravel; moderately acid; gradual smooth boundary.

Bt3—31 to 42 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure parting to weak coarse subangular blocky; firm; common distinct brown (10YR 5/3) clay films on faces of peds; few fine prominent gray (10YR 6/1) iron depletions in root channels and/or pores; 1 percent gravel; strongly acid; clear smooth boundary.

Bt4—42 to 58 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure; firm; many distinct brown (10YR 5/3) clay films on faces of peds; few medium prominent black (10YR 2/1) masses of manganese accumulation throughout and common fine prominent gray (10YR 6/1) iron depletions between peds; 1 percent gravel; slightly acid; gradual smooth boundary.

C—58 to 80 inches; strong brown (7.5YR 5/6) loam; massive; friable; very few faint brown (10YR 5/3) clay films in root channels and/or pores; 1 percent gravel; slightly alkaline.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 40 to 60 inches
Slope range: 18 to 60 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 5
Texture—loam, silt loam, or clay loam

E or BE horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—loam, silt loam, or clay loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—clay loam or loam
Content of rock fragments—0 to 5 percent

C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—1 to 6
Texture—loam or clay loam
Content of rock fragments—1 to 5 percent

559F—Lindley loam, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Glacial till (pre-Illinoian)

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Lindley and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Keswick soils, which have more clay in the subsoil than the Lindley soil

Dissimilar soils:
• Blyton soils on flood plains along drainageways
• Marseilles soils, which have shale in the lower part; in areas downslope from the Lindley soil

• Lacrescent soils, which formed in limestone colluvium; in areas downslope from the Lindley soil
• Lamont soils, which have less clay in the subsoil than the Lindley soil; in areas downslope from the Lindley soil
• Stookey and Timula soils, which have less clay in the subsoil than the Lindley soil; in areas upslope from the Lindley soil
• The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

559G—Lindley loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Glacial till (pre-Illinoian)

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Lindley and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Keswick soils, which have more clay in the subsoil than the Lindley soil; in areas upslope from the Lindley soil

Dissimilar soils:
• Blyton soils on flood plains along drainageways
• Marseilles soils, which have shale in the lower part; in areas downslope from the Lindley soil
• Lacrescent soils, which formed in limestone colluvium; in areas downslope from the Lindley soil
• Lamont soils, which have less clay in the subsoil than the Lindley soil; in areas downslope from the Lindley soil
• Stookey and Timula soils, which have less clay in the subsoil than the Lindley soil; in areas upslope from the Lindley soil
• The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Littleton Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon for MLRA 115C

Littleton silt loam, 0 to 2 percent slopes, at an elevation of 470 feet; 1,000 feet east and 1,200 feet north of the southwest corner of sec. 26, T. 3 S., R. 8 W.; USGS Marblehead, Illinois, topographic quadrangle; lat. 39 degrees 46 minutes 31 seconds N. and long. 91 degrees 18 minutes 4 seconds W., NAD 27:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots throughout; neutral; abrupt smooth boundary.
A—9 to 19 inches; very dark grayish brown (10YR 3/2) silt loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular blocky structure; friable; few very fine roots throughout; many faint very dark gray (10YR 3/1) organic coats on faces of peds; few fine faint brown (7.5YR 4/3) masses of iron accumulation between peds; slightly acid; clear smooth boundary.
AB—19 to 32 inches; very dark grayish brown (10YR 3/2) silt loam, gray (10YR 5/1) dry; weak medium subangular blocky structure; friable; few very fine roots throughout; many faint very dark gray (10YR 3/1) organic coats on faces of peds; few fine faint brown (7.5YR 4/3) masses of iron accumulation between peds; slightly acid; clear smooth boundary.
Bw1—32 to 45 inches; dark grayish brown (10YR 4/2) silt loam; weak coarse subangular blocky structure; friable; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine distinct brown (7.5YR 4/4) masses

of iron accumulation and common fine faint grayish brown (10YR 5/2) iron depletions throughout; slightly acid; gradual smooth boundary.

Bw2—45 to 53 inches; dark grayish brown (10YR 4/2) silt loam; weak coarse subangular blocky structure; friable; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and very few distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores; few fine faint brown (7.5YR 4/3) masses of iron accumulation throughout and few fine faint gray (10YR 5/1) iron depletions between peds; slightly acid; gradual smooth boundary.

C—53 to 65 inches; grayish brown (10YR 5/2) silt loam; massive; friable; very few distinct very dark grayish brown (10YR 3/2) organic coats lining pores; many medium distinct brown (7.5YR 4/4) masses of iron accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to base of diagnostic horizon: 30 to 62 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bw horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 or 3
Texture—silt loam or silty clay loam

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam or silty clay loam

81A—Littleton silt loam, 0 to 2 percent slopes

Setting

Landform: Alluvial fans
Position on the landform: Footslopes and stream terraces

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Littleton and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils in which the dark surface soil is less than 24 inches thick

Dissimilar soils:
- The poorly drained Vesser soils, which have a gray subsurface layer and have more clay in the subsoil than the Littleton soil
- Wakeland soils, which formed in light-colored alluvium; in the lower positions on the landform
- The well drained Worthen soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Mannon Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon for MLRA 115C

Mannon silt loam, 2 to 5 percent slopes, at an elevation of 615 feet; 1,055 feet west and 200 feet south of the northeast corner of sec. 26, T. 2 N., R. 9 W., USGS Lima, Illinois, topographic quadrangle; lat. 40 degrees 8 minutes 23 seconds N. and long. 91 degrees 24 minutes 5.1 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine and fine roots; moderately acid; clear smooth boundary.

BE—7 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; moderate thin platy structure parting to moderate fine subangular blocky; friable; many very fine and fine roots; very few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine distinct very pale brown

(10YR 7/3) clay depletions between peds; moderately acid; clear smooth boundary.

Bt1—10 to 23 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; many very fine and fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds and very few prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; slightly acid; clear smooth boundary.

Bt2—23 to 36 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; common very fine roots; few faint dark yellowish brown (10YR 3/4) clay films on faces of peds and few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; slightly acid; clear smooth boundary.

Bt3—36 to 50 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

BC—50 to 59 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation and many fine distinct light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

C1—59 to 72 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; many fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

C2—72 to 80 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; many fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and many fine distinct black (2.5Y 2/1) masses of iron accumulation throughout; moderately acid.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 45 to 60 inches
Slope range: 0 to 7 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam

C horizon:
Hue—2.5Y or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

678A—Mannon silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Mannon and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Downsouth soils, which have more clay in the upper part of the subsoil than the Mannon soil
- Biggsville soils, which have a thicker dark surface soil than that of the Mannon soil
- Stookey soils, which have a light-colored surface soil

Dissimilar soils:
- Soils that are somewhat poorly drained; in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section

- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

678B—Mannon silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Mannon and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Downsouth soils, which have more clay in the upper part of the subsoil than the Mannon soil
- Biggsville soils, which have a thicker dark surface soil than that of the Mannon soil
- Stookey soils, which have a light-colored surface soil

Dissimilar soils:
- Soils that are somewhat poorly drained; in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

829B—Biggsville-Mannon silt loams, 1 to 7 percent slopes

Setting

Landform: Interfluves
Position on the landform: Biggsville—broad summits; Mannon—summits and head slopes
Type of landscape: Uplands
Special features: These soils occur on upland landscapes in areas of urban development in or near Quincy. They are used as sites for buildings, streets, sidewalks, and other structures.

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Biggsville and similar soils: 45 percent
Mannon and similar soils: 45 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately intermingled that mapping them separately was not practical.

Similar soils:
- Soils that have slopes of more than 7 percent
- Stookey soils, which have a light-colored surface layer

Dissimilar soils:
- Orthents in areas where the soils have been disturbed
- Soils that are somewhat poorly drained; in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Marseilles Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Marseilles silt loam, 35 to 60 percent slopes, at an elevation of 685 feet; 1,400 feet south and 1,150 feet east of the northwest corner of sec. 14, T. 2 S., R. 6 W.; USGS Liberty, Illinois, topographic quadrangle; lat. 39 degrees 53 minutes 57 seconds N. and long. 91 degrees 3 minutes 53 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate

very fine granular structure; friable; strongly acid; abrupt smooth boundary.

E—3 to 7 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; moderate thin platy and moderate very fine granular structure; friable; very few faint dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; strongly acid; clear smooth boundary.

BE—7 to 10 inches; yellowish brown (10YR 5/4) silt loam; weak medium platy and moderate very fine and fine subangular blocky structure; friable; very few faint dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; strongly acid; clear smooth boundary.

2Bt1—10 to 17 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; very few faint dark grayish brown (10YR 4/2) organic coats in root channels and/or pores and few distinct brown (10YR 5/3) clay films on faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.

2Bt2—17 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; strong medium subangular blocky structure; firm; common distinct brown (10YR 5/3) clay films and very few faint very pale brown (10YR 7/3) silt coats on faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.

2Bt3—22 to 35 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; very few faint brown (10YR 5/3) clay films and very few distinct very pale brown (10YR 7/3) silt coats on faces of peds; 1 percent gravel; very strongly acid; gradual smooth boundary.

2Cr—35 to 60 inches; 70 percent light olive brown (2.5Y 5/4) and 30 percent olive (5Y 5/3) silty clay and unweathered bedrock; massive; firm; 10 percent shale gravel; very strongly acid.

MLRA Series Range in Characteristics

Thickness of the loess or silty material: 0 to 15 inches
Depth to paralithic contact: 20 to 40 inches
Slope range: 10 to 60 percent

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—2 or 3
Texture—silt loam, silty clay loam, or loam

E or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt or 2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, silty clay, or clay

Cr horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—0 to 4

549D2—Marseilles silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Shale residuum
Special feature: The Marseilles soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Marseilles and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have shale bedrock at a depth of more than 40 inches

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- El Dara soils, which have more sand in the subsoil than the Marseilles soil; in areas upslope from the Marseilles soil
- Keswick and Ursa soils in areas upslope from the Marseilles soil
- The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section

- “Engineering” section
- “Soil Properties” section

549D3—Marseilles silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Shale residuum
Special feature: The Marseilles soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Marseilles and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Moderately eroded soils that have less clay in the surface layer than the Marseilles soil
- Soils that have shale bedrock at a depth of more than 40 inches

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- El Dara soils, which have more sand in the subsoil than the Marseilles soil; in areas upslope from the Marseilles soil
- Keswick and Ursa soils in areas upslope from the Marseilles soil
- The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

549F—Marseilles silt loam, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Shale residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Marseilles soil: 90 percent
Dissimilar soils: 10 percent

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- El Dara soils, which have more sand in the subsoil than the Marseilles soil; in areas upslope from the Marseilles soil
- Hickory and Lindley soils, which have more sand than the Marseilles soil; in areas upslope from the Marseilles soil
- Lacrescent soils, which formed in limestone colluvium and have a darker surface soil than that of the Marseilles soil; in areas downslope from the Marseilles soil
- Soils that have outcrops of shale or sandstone

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

549G—Marseilles silt loam, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Shale residuum

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Marseilles soil: 90 percent
Dissimilar soils: 10 percent

Dissimilar soils:
• Blyton soils on flood plains along drainageways
• El Dara soils, which have more sand in the subsoil than the Marseilles soil; in areas upslope from the Marseilles soil
• Hickory and Lindley soils, which have more sand than the Marseilles soil; in areas upslope from the Marseilles soil
• Lacrescent soils, which formed in limestone colluvium and have a darker surface soil than that of the Marseilles soil; in areas downslope from the Marseilles soil
• Soils that have outcrops of shale, limestone, or sandstone
• The somewhat poorly drained Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Menfro Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Menfro silt loam, 2 to 5 percent slopes, at an elevation of 675 feet; 310 feet west and 240 feet south of the northeast corner of sec. 5, T. 1 N., R. 8 W.; USGS Mendon, Illinois, topographic quadrangle; lat. 40 degrees 6 minutes 35 seconds N. and long. 90 degrees 20 minutes 32 seconds W., NAD 27:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common fine and medium roots throughout; few very fine pores; moderately acid; abrupt smooth boundary.

BE—8 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine and medium roots throughout; common fine pores; few distinct brown (10YR 4/3) clay films in root channels and/or pores; few distinct light gray (10YR 7/2) clay depletions between peds; moderately acid; clear smooth boundary.

Bt1—14 to 25 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots throughout; common fine pores; common distinct brown (10YR 4/3) clay films and few distinct light brownish gray (10YR 6/2) silt coats on faces of peds; moderately acid; clear smooth boundary.

Bt2—25 to 33 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; many very fine and fine pores; few distinct dark yellowish brown (10YR 4/4) clay films and few distinct light brownish gray (10YR 6/2) silt coats on faces of peds; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation throughout; strongly acid; clear smooth boundary.

Bt3—33 to 40 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; few fine roots throughout; many very fine and fine pores; common distinct very pale brown (10YR 7/3) silt coats and common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine and medium distinct strong brown (7.5YR 5/8) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

BC—40 to 58 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure; firm; few very fine roots throughout; common very fine and fine pores; few distinct very pale brown (10YR 7/3) silt coats on faces of peds and few distinct dark yellowish brown (10YR 4/4) clay films in root channels and/or pores; common fine and medium distinct strong brown (7.5YR 5/8) masses of iron accumulation throughout; moderately acid; gradual wavy boundary.

C1—58 to 74 inches; yellowish brown (10YR 5/4) silt loam; massive; firm; common very fine and fine pores; few distinct brown (10YR 4/3) clay films in root channels and/or pores; few fine distinct strong

brown (7.5YR 5/8) masses of iron accumulation throughout; moderately acid; gradual wavy boundary.

C2—74 to 92 inches; light yellowish brown (10YR 6/4) silt loam; massive; firm; few very fine pores; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation throughout; moderately acid; gradual wavy boundary.

C3—92 to 95 inches; 75 percent pale brown (10YR 6/3) and 15 percent brown (10YR 5/3) silt loam; massive; firm; few very fine pores; common medium and coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, common medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and common medium and coarse faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 30 to 100 inches
Slope range: 2 to 18 percent

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 or 4
Texture—silt loam

79B—Menfro silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Menfro and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The moderately well drained Downsouth soils, which have a darker surface layer than that of the Menfro soil
- Soils on terraces
- Soils that have more clay in the subsoil than the Menfro soil
- The moderately well drained Winfield soils

Dissimilar soils:
- The somewhat poorly drained Bethalto soils, which have a darker surface layer than that of the Menfro soil
- The somewhat poorly drained Caseyville soils

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

79C2—Menfro silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Menfro soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Menfro and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The moderately well drained Downsouth soils, which have a darker surface layer than that of the Menfro soil
- Severely eroded soils that have more clay in the surface layer than the Menfro soil
- Soils on terraces
- Soils that have more clay in the subsoil than the Menfro soil
- The moderately well drained Winfield soils

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Menfro soil; in areas downslope from the Menfro soil
- Crider soils, which have more clay in the lower part than the Menfro soil; in areas downslope from the Menfro soil
- Goss soils, which have more clay and rock fragments throughout than the Menfro soil; in areas downslope from the Menfro soil
- Keswick soils, which have more clay throughout than the Menfro soil; in areas downslope from the Menfro soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

79C3—Menfro silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Menfro soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Menfro and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The moderately well drained Downsouth soils, which have a darker surface layer than that of the Menfro soil
- Moderately eroded soils that have less clay in the surface layer than the Menfro soil
- Soils on terraces
- The moderately well drained Winfield soils

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Menfro soil; in areas downslope from the Menfro soil
- Crider soils, which have more clay in the lower part than the Menfro soil; in areas downslope from the Menfro soil
- Goss soils, which have more clay and rock fragments throughout than the Menfro soil; in areas downslope from the Menfro soil
- Keswick soils, which have more clay throughout than the Menfro soil; in areas downslope from the Menfro soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

79D2—Menfro silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Menfro soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Menfro and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Severely eroded soils that have more clay in the surface layer than the Menfro soil
- The moderately well drained Winfield soils in the less sloping positions

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Menfro soil; in areas downslope from the Menfro soil
- Crider soils, which have more clay in the lower part than the Menfro soil; in areas downslope from the Menfro soil
- Goss soils, which have more clay and rock fragments throughout than the Menfro soil; in areas downslope from the Menfro soil
- Keswick soils, which have more clay throughout than the Menfro soil; in areas downslope from the Menfro soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

79D3—Menfro silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Menfro soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Menfro and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Moderately eroded soils that have less clay in the surface layer than the Menfro soil
- The moderately well drained Winfield soils in the less sloping positions

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Menfro soil; in areas downslope from the Menfro soil
- Crider soils, which have more clay in the lower part than the Menfro soil; in areas downslope from the Menfro soil
- Goss soils, which have more clay and rock fragments throughout than the Menfro soil; in areas downslope from the Menfro soil
- Keswick soils, which have more clay throughout than the Menfro soil; in areas downslope from the Menfro soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

801B—Orthents, silty, undulating

Setting

- Orthents occur in cut and filled areas and in borrow areas, where the soils have been excavated or disturbed. They are on uplands, stream terraces, and flood plains.

Soil Properties and Qualities

Drainage class: Well drained
General description: This map unit generally consists of silty material derived from former soil layers and silty underlying material.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Orthents: 90 percent
Dissimilar soils: 10 percent

Dissimilar soils:
- Marseilles soils, which have shale in the lower part; in the higher positions on side slopes in areas that have not been altered by human activity
- Lacrescent soils, which have limestone rock fragments in the subsoil; in the more sloping areas that have not been altered by human activity
- Soils that have more gravel throughout than the Orthents
- Stookey soils in undisturbed areas
- Timewell and Ipava soils, which have a dark surface soil; in undisturbed areas
- Wakeland soils in undisturbed areas along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon for MLRA 115C

Osco silt loam, 0 to 2 percent slopes, at an elevation of 645 feet; 1,440 feet south and 300 feet west of the northeast corner of sec. 17, T. 7 N., R. 1 E.; USGS Bushnell East, Illinois, topographic quadrangle; lat. 40 degrees 35 minutes 18 seconds N. and long. 90 degrees 25 minutes 3 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; friable; few very fine roots throughout; neutral; abrupt smooth boundary.

A—7 to 12 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots throughout; neutral; clear smooth boundary.

BA—12 to 16 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots throughout; many distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds and in pores; neutral; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots throughout; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds and very few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds and in pores; slightly acid; clear smooth boundary.

Bt2—23 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots throughout; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine faint yellowish brown (10YR 5/4) masses of iron and manganese accumulation throughout and common fine grayish brown (10YR 5/2) iron depletions in cracks; moderately acid; clear smooth boundary.

BC—36 to 47 inches; brown (10YR 5/3) silt loam; weak coarse subangular blocky structure; friable; very few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium distinct yellowish brown (10YR 5/6) masses of iron and manganese accumulation and common fine faint pale brown (10YR 6/3) iron and manganese concretions throughout; slightly acid; gradual smooth boundary.

C—47 to 60 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to carbonates (if they occur): More than 48 inches
Depth to base of diagnostic horizon: 36 to 66 inches
Slope range: 2 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR

Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

C or Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Greenbush soils, which have a thinner dark surface layer than that of the Osco soil

Dissimilar soils:
• The somewhat poorly drained Timewell and Ipava soils in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Passport Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon for MLRA 115C

Passport silt loam, 5 to 10 percent slopes, at an elevation of 645 feet; 470 feet west and 315 feet north of the southeast corner of sec. 24, T. 1 N., R. 7 W.; USGS Coatsburg, Illinois, topographic quadrangle; lat. 42 degrees 3 minutes 30 seconds N. and long. 91 degrees 9 minutes 2.5 seconds W., NAD 27:

Ap—0 to 5 inches; brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; weak fine granular structure; friable; many fine and medium roots; few fine distinct black (10YR 2/1) masses of iron and manganese accumulation and common fine faint yellowish brown (10YR 5/4) masses of iron accumulation throughout; neutral; abrupt smooth boundary.

Bt1—5 to 13 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; firm; common fine and medium roots; few distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint pale brown (10YR 6/3) iron depletions throughout; moderately acid; clear smooth boundary.

Bt2—13 to 19 inches; yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; common fine and medium roots; few distinct brown (10YR 4/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) masses of iron and manganese accumulation throughout, and common fine distinct light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bt3—19 to 30 inches; 80 percent brown (10YR 5/3) and 10 percent grayish brown (10YR 5/2) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common fine and medium roots; few distinct brown (10YR 4/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) masses of iron and manganese accumulation throughout, and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; slightly acid; gradual smooth boundary.

Bt4—30 to 45 inches; 80 percent yellowish brown (10YR 5/4) and 10 percent brown (10YR 5/3) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common medium distinct black (10YR 2/1) masses of iron and

manganese accumulation throughout, and common fine distinct light brownish gray (10YR 6/2) iron depletions in cracks; neutral; gradual smooth boundary.

2Btg1—45 to 58 inches; grayish brown (10YR 5/2) clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; few prominent gray (10YR 5/1) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common medium distinct black (10YR 2/1) iron and manganese concretions throughout; 2 percent mixed-noncalcareous gravel; neutral; clear smooth boundary.

2Btg2—58 to 68 inches; grayish brown (2.5Y 5/2) clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; few prominent gray (10YR 5/1) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation between peds, common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation throughout, and few medium distinct black (10YR 2/1) masses of iron and manganese accumulation throughout; 1 percent mixed-noncalcareous gravel; neutral; clear smooth boundary.

2Btg3—68 to 78 inches; grayish brown (2.5Y 5/2) clay loam; moderate medium subangular blocky structure; firm; few fine roots; few prominent gray (10YR 5/1) clay films on faces of peds; common medium distinct black (10YR 2/1) masses of iron and manganese accumulation throughout and common medium and coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation between peds; 2 percent mixed-noncalcareous gravel and 2 percent mixed-noncalcareous cobbles; neutral; clear smooth boundary.

2BCg—78 to 84 inches; grayish brown (2.5Y 5/2) clay loam; moderate medium prismatic structure parting to moderate coarse angular blocky; firm; very few prominent dark gray (10YR 4/1) clay films in root channels and/or pores and few distinct gray (10YR 5/1) clay films on faces of peds; common medium distinct light olive brown (2.5Y 5/6) masses of iron accumulation between peds, few medium distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, and few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; 1 percent mixed-noncalcareous gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the loamy materials: 20 to 45 inches
Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 40 to 80 inches
Slope range: 5 to 10 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam, silty clay loam, or clay loam
Content of rock fragments—less than 1 percent

Bt or Btg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, clay loam, silt loam, or loam
Content of rock fragments—0 to 5 percent

2Bt or 2Btg horizon:
Hue—10YR, 2.5Y, or 7.5YR
Value—4 to 6
Chroma—1 to 8
Texture—clay loam, loam, silty clay loam, silty clay, or silt loam
Content of rock fragments—1 to 5 percent

2Btgb, 2C, or 2Cg horizon:
Hue—10YR, 7.5YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—clay loam or loam
Content of rock fragments—1 to 10 percent

652C2—Passport silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Pedisediment and the underlying paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Passport and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less sand in the upper part of the subsoil than the Passport soil; in areas upslope from the Passport soil
• The moderately well drained El Dara soils, which formed in Cretaceous deposits; in areas downslope from the Passport soil
• Fishhook soils, which have more clay in the lower part of the subsoil than the Passport soil
• Severely eroded soils that have more clay in the surface layer than the Passport soil
• Soils that have less sand in the subsoil than the Passport soil

Dissimilar soils:
• The well drained Baylis soils in areas downslope from the Passport soil
• Keswick soils, which have more clay in the upper part of the subsoil than the Passport soil; in areas downslope from the Passport soil
• The moderately well drained Winfield soils, which have less sand in the subsoil than the Passport soil; in areas upslope from the Passport soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

652C3—Passport silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Pedisediment and the underlying paleosol formed in glacial till
Special feature: The Passport soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Passport and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Bunkum soils, which have less sand in the upper part of the subsoil than the Passport soil; in areas upslope from the Passport soil
• The moderately well drained El Dara soils, which formed in Cretaceous deposits; in areas downslope from the Passport soil
• Fishhook soils, which have more clay in the lower part of the subsoil than the Passport soil
• Moderately eroded soils that have less clay in the surface layer than the Passport soil
• Soils that have less sand in the subsoil than the Passport soil

Dissimilar soils:
• The well drained Baylis soils in areas downslope from the Passport soil
• Keswick soils, which have more clay in the upper part of the subsoil than the Passport soil; in areas downslope from the Passport soil
• The moderately well drained Winfield soils, which have less sand in the subsoil than the Passport soil; in areas upslope from the Passport soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

864—Pits, quarries

Setting

• This map unit consists of open excavations from which limestone, sand, gravel, or soil material has been removed or is currently being removed.

Composition

Pits: 90 percent
Dissimilar components: 10 percent

Dissimilar components:
• Areas of machinery
• Areas of undisturbed soils along the outer edges of the quarries

- Orthents along quarry boundaries where spoil material has been placed
- Pools of water less than 3 acres in size
- Stockpiles of crushed rock

Raveenwash Series

Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, mesic Aquic Udifluvents

Typical Pedon for MLRA 115C

Raveenwash silt loam, 0 to 2 percent slopes, frequently flooded, long duration, at an elevation of 470 feet; 2,200 feet north and 320 feet east of the southwest corner of sec. 16, T. 1 S., R. 9 W.; USGS Quincy West, Illinois, topographic quadrangle; lat. 39 degrees 58 minutes 53.5 seconds N. and long. 91 degrees 26 minutes 59 seconds W., NAD 27:

AC—0 to 8 inches; stratified, 80 percent dark grayish brown (10YR 4/2), 15 percent very dark grayish brown (10YR 3/2), and 5 percent yellowish brown (10YR 5/4) silt loam; 60 percent grayish brown (10YR 5/2) and 40 percent light brownish gray (10YR 6/2) dry; weak medium platy structure parting to moderate medium granular; friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

C1—8 to 16 inches; stratified, 90 percent dark grayish brown (10YR 4/2) and 10 percent brown (10YR 5/3) silt loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; common medium distinct brown (7.5YR 4/4) masses of iron accumulation throughout, few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and few fine faint grayish brown (10YR 5/2) iron depletions in cracks; slightly effervescent; slightly alkaline; clear smooth boundary.

C2—16 to 31 inches; stratified, 80 percent olive brown (2.5Y 4/3) and 20 percent brown (10YR 5/3) loam; weak medium platy and weak very fine subangular blocky structure; very friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout and few fine faint grayish brown (10YR 5/2) iron depletions along root channels; very slightly effervescent; slightly alkaline; gradual smooth boundary.

C3—31 to 46 inches; stratified, 90 percent dark grayish brown (2.5Y 4/2) and 10 percent brown (10YR 5/3) silt loam; moderate very fine and fine subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; few fine prominent brown (7.5YR 4/4) masses of iron accumulation between peds and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; very slightly effervescent; slightly alkaline; gradual smooth boundary.

C4—46 to 60 inches; stratified, 95 percent dark grayish brown (2.5Y 4/2) and 5 percent brown (10YR 5/3) silt loam; weak fine and medium subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout; very slightly effervescent; slightly alkaline.

MLRA Series Range in Characteristics

Depth to carbonates: Less than 10 inches
Depth to base of diagnostic horizon: 0 to 15 inches
Slope range: 0 to 2 percent

AC, Ap, or A horizon:
Hue—10YR or 2.5Y
Value—2 to 4
Chroma—1 to 3
Texture—silt loam

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—2 to 7
Chroma—1 to 8
Texture—stratified silt loam, loam, sandy loam, loamy sand, or sand

3368L—Raveenwash silt loam, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Alluvial ridges
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Raveenwash and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Blake soils, which have more clay and less sand throughout than the Raveenwash soil; in positions away from the stream channel
- Soils that have more sand throughout than the Raveenwash soil

Dissimilar soils:
- The poorly drained Slacwater soils, which have more clay and less sand throughout than the Raveenwash soil; in the lower positions on the landform
- Soils that do not have carbonates throughout

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Riley Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon for MLRA 115C (Official Series Description)

Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 470 feet; 1,595 feet east and 340 feet south of the northwest corner of sec. 2, T. 3 S., R. 9 W.; USGS Quincy Southwest, Illinois, topographic quadrangle; lat. 39 degrees 50 minutes 35 seconds N. and long. 91 degrees 24 minutes 30.2 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; moderate fine granular structure; firm; common fine roots throughout; very few distinct very dark gray (10YR 3/1) organic coats on faces of peds; slightly acid; abrupt smooth boundary.

A—7 to 13 inches; very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; common fine roots throughout; moderately acid; abrupt smooth boundary.

Bw1—13 to 19 inches; dark grayish brown (10YR 4/2) silty clay loam; weak coarse subangular blocky structure; firm; common fine roots throughout and common very fine and fine roots in cracks; very few distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; many fine distinct brown (7.5YR 4/3) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bw2—19 to 27 inches; grayish brown (10YR 5/2) loam; moderate coarse subangular blocky structure; firm; common very fine and fine roots in cracks; many fine and medium distinct dark yellowish brown (10YR 3/6) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

2C1—27 to 36 inches; brown (10YR 4/3) loamy sand; weak coarse subangular blocky structure; friable; few fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

2C2—36 to 60 inches; brown (10YR 5/3) sand; single grain; loose; neutral; clear smooth boundary.

2C3—60 to 80 inches; 60 percent brown (10YR 5/3) and 40 percent pale brown (10YR 6/3) sand; single grain; loose; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to sandy water-laid sediments: 16 to 40 inches
Depth to base of diagnostic horizon: 18 to 40 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silty clay loam, clay loam, silt loam, or loam

Bw horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam, clay loam, sandy clay loam, loam, or silt loam

2C horizon:
Hue—10YR
Value—4 to 7
Chroma—2 to 4
Texture—loamy sand, sand, or loamy fine sand

8452A—Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Riley and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Tice soils, which have less sand throughout than the Riley soil

Dissimilar soils:
- The poorly drained Beaucoup soils, which have less sand throughout than the Riley soil; in the lower positions on the landform
- The poorly drained Gorham soils, which have less sand in the upper part of the subsoil than the Riley soil; in the lower positions on the landform
- The well drained Ross soils, which have a thicker dark surface soil than that of the Riley soil; in the higher positions on the landform
- Soils that have more sand in the upper part of the subsoil than the Riley soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Ross Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon for MLRA 115C

Ross silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 460 feet; 1,500 feet north and 2,200 feet east of the southwest corner of sec. 24, T. 2 N., R. 10 W.; USGS Canton, Illinois, topographic quadrangle; lat. 40 degrees 8 minutes 41 seconds N. and long. 91 degrees 30 minutes 3 seconds W., NAD 27:

Ap—0 to 7 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; few fine roots; slightly acid; clear smooth boundary.
A1—7 to 15 inches; very dark grayish brown (10YR 3/2) loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; few fine roots; neutral; clear smooth boundary.
A2—15 to 21 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; friable; few fine roots; neutral; clear smooth boundary.
AB—21 to 30 inches; dark brown (10YR 3/3) sandy clay loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; neutral; clear smooth boundary.
Bt1—30 to 38 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak fine subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.
Bt2—38 to 48 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak very fine subangular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.
C1—48 to 56 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; very friable; 1 percent gravel; neutral; clear smooth boundary.
C2—56 to 75 inches; yellowish brown (10YR 5/4) sandy loam; massive; very friable; 1 percent gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches
Depth to carbonates (if they occur): More than 24 inches
Depth to base of diagnostic horizon: 24 to 48 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—loam, silt loam, sandy loam, fine sandy loam, silty clay loam, or sandy clay loam
Content of rock fragments—0 to 5 percent

Bt or Bw horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—silt loam, loam, sandy clay loam, silty clay loam, sandy loam, or clay loam
Content of rock fragments—0 to 10 percent

C horizon:
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—sandy loam, loam, silt loam, or sandy clay loam
Content of rock fragments—0 to 45 percent

8073A—Ross silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Ross and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that are moderately well drained
- Soils that have a thinner dark surface soil than that of the Ross soil
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- Soils that are not subject to flooding
- Soils that have more sand throughout than the Ross soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Rozetta silt loam, 2 to 5 percent slopes, at an elevation of 605 feet; 2,574 feet west and 429 feet north of the southeast corner of sec. 15, T. 4 N., R. 2 E.; USGS Ipava, Illinois, topographic quadrangle; lat. 40 degrees 19 minutes 14 seconds N. and long. 90 degrees 15 minutes 59 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak very fine granular structure; friable; common very fine roots; few fine roots; neutral; clear smooth boundary.

E—7 to 11 inches; brown (10YR 4/3) silt loam; weak medium platy structure parting to weak very fine subangular blocky; friable; common very fine roots; few distinct light gray (10YR 7/2) (dry) silt coats on faces of peds; neutral; clear smooth boundary.

Bt1—11 to 19 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films and few distinct light gray (10YR 7/2) (dry) silt coats on faces of peds; few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; moderately acid; clear smooth boundary.

Bt2—19 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films and few distinct light gray (10YR 7/2) (dry) silt coats on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; moderately acid; gradual smooth boundary.

Bt3—29 to 39 inches; 80 percent yellowish brown (10YR 5/4), 15 percent yellowish brown (10YR 5/6), and 5 percent pale brown (10YR 6/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct dark

yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation with diffuse boundaries and common fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; strongly acid; gradual smooth boundary.

Bt4—39 to 45 inches; 60 percent yellowish brown (10YR 5/4), 20 percent yellowish brown (10YR 5/6), and 20 percent pale brown (10YR 6/3) silty clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; friable; few very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; moderately acid; gradual smooth boundary.

BC—45 to 55 inches; 70 percent yellowish brown (10YR 5/4) and 30 percent yellowish brown (10YR 5/6) silty clay loam; weak coarse prismatic structure; friable; few very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; common fine distinct light brownish gray (10YR 6/2) iron depletions along root channels and pores; moderately acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; few very fine roots; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; light brownish gray (10YR 6/2) iron depletions along pores; moderately acid.

MLRA Series Range in Characteristics

Depth to carbonates: 42 to more than 72 inches
Depth to base of diagnostic horizon: 42 to 72 inches
Slope range: 2 to 10 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam or silty clay loam

E horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

279B—Rozetta silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Greenbush soils, which have a darker surface layer than that of the Rozetta soil
• Soils that have a seasonal high water table at a depth of more than 72 inches
• Soils on terraces
• Soils that have more clay in the subsoil than the Rozetta soil

Dissimilar soils:
• The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Rozetta soil; in areas downslope from the Rozetta soil
• The somewhat poorly drained Clarksdale soils, which have a darker surface layer than that of the Rozetta soil and have more clay in the subsoil; in the slightly lower positions on the landform
• The somewhat poorly drained Keomah soils, which have more clay in the subsoil than the Rozetta soil; in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

279C2—Rozetta silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Rozetta soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 72 inches
- Soils on terraces
- Soils that have more clay in the subsoil than the Rozetta soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Rozetta soil; in areas downslope from the Rozetta soil
- Greenbush soils, which have a darker surface layer than that of the Rozetta soil
- The somewhat poorly drained Fishhook soils, which have more clay in the lower part of the subsoil than the Rozetta soil; in areas downslope from the Rozetta soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

279C3—Rozetta silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Rozetta soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 60 inches
- Moderately eroded soils that have less clay in the surface layer than the Rozetta soil
- Soils that have more clay in the subsoil than the Rozetta soil

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Rozetta soil; in areas downslope from the Rozetta soil
- The somewhat poorly drained Fishhook soils, which have more clay in the lower part of the subsoil than the Rozetta soil; in areas downslope from the Rozetta soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Rubio Series

Taxonomic classification: Fine, smectitic, mesic Vertic Albaqualfs

Typical Pedon for MLRA 115C

Rubio silt loam, 0 to 2 percent slopes, at an elevation of 690 feet; 400 feet east and 1,750 feet south of the northwest corner of sec. 8, T. 2 N., R. 5 W.; USGS Bowen, Illinois, topographic quadrangle; lat. 40 degrees 10 minutes 23 seconds N. and long. 91 degrees 0 minutes 20.2 seconds W., NAD 27:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few fine roots throughout; slightly acid; clear smooth boundary.

Eg—9 to 16 inches; gray (10YR 5/1) silt loam, light gray (10YR 7/1) dry; moderate thin platy structure; friable; few fine roots throughout; few fine brown (10YR 4/3) masses of iron accumulation between peds; moderately acid; clear smooth boundary.

Btg1—16 to 24 inches; dark grayish brown (10YR 4/2) silty clay; weak fine prismatic structure; firm; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation and few fine faint grayish brown (10YR 5/2) iron depletions between peds; strongly acid; clear smooth boundary.

Btg2—24 to 30 inches; grayish brown (10YR 5/2) silty clay; weak fine prismatic structure; firm; few very fine roots throughout; few distinct dark gray (10YR 4/1) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation and common fine faint gray (10YR 5/1) iron depletions between peds; moderately acid; clear smooth boundary.

Btg3—30 to 36 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure; firm; few very fine roots throughout; common faint distinct gray (10YR 5/1) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation between peds, common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation between peds, and common medium faint grayish brown (10YR 5/2) iron depletions between peds; slightly acid; clear smooth boundary.

Btg4—36 to 45 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure; firm; few very fine roots throughout; few distinct gray (10YR 5/1) clay films on faces of peds; common medium prominent brown (7.5YR 4/4) masses of iron accumulation and common medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation between peds and in pores; slightly acid; clear smooth boundary.

BCg—45 to 55 inches; olive gray (5Y 5/2) silty clay loam; weak medium prismatic structure; friable; many medium prominent brown (7.5YR 4/4) masses of iron accumulation and many medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation between peds and in pores; slightly acid; clear smooth boundary.

Cg—55 to 74 inches; olive gray (5Y 5/2) silty clay loam; massive; friable; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation lining root channels and/or pores; neutral.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 42 to 72 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—3
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—4 or 5
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 or 2
Texture—silty clay loam or silty clay

Cg horizon:
Hue—5Y
Value—4 or 5
Chroma—1 or 2
Texture—silty clay loam

111A—Rubio silt loam, 0 to 2 percent slopes

Setting

Landform: Drainage divides
Position on the landform: Low-lying areas
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Rubio and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:

- Rushville soils, which have a lighter colored surface layer than that of the Rubio soil
- Virden soils, which have a thicker dark surface soil than that of the Rubio soil and do not have a gray subsurface layer

Dissimilar soils:

- The somewhat poorly drained Timewell and Ipava soils, which have a thicker dark surface soil than the Rubio soil; in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Rushville Series

Taxonomic classification: Fine, smectitic, mesic Typic Albaqualfs

Typical Pedon for MLRA 115C

Rushville silt loam, 0 to 2 percent slopes, at an elevation of 695 feet; 2,150 feet east and 250 feet south of the northwest corner of sec. 23, T. 1 S., R. 6 W.; USGS Liberty, Illinois, topographic quadrangle; lat. 39 degrees 58 minutes 28.7 seconds N. and long. 91 degrees 3 minutes 36.8 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak thin prismatic structure parting to moderate fine granular; friable; common fine roots; many fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, few fine and medium distinct black (2.5Y 2/1) iron and manganese nodules throughout, and many distinct very pale brown (10YR 8/2) clay depletions between peds; neutral; clear smooth boundary.

Eg—7 to 13 inches; grayish brown (10YR 5/2) silt loam, very pale brown (10YR 8/2) dry; weak thick platy structure parting to moderate medium subangular blocky; friable; common fine roots; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, many fine distinct black (2.5Y 2/1) iron and manganese nodules throughout, and many distinct white (10YR 8/1) clay depletions throughout; neutral; clear smooth boundary.

Btg1—13 to 21 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common fine and medium roots; many prominent grayish brown (10YR 5/2) clay films on faces of peds; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and few distinct black (2.5Y 2/1) iron and manganese nodules throughout; strongly acid; clear wavy boundary.

Btg2—21 to 26 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many prominent grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few distinct black (2.5Y 2/1) iron and manganese nodules throughout; moderately acid; clear wavy boundary.

Btg3—26 to 32 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many prominent grayish brown (10YR 5/2) clay films and many prominent white (10YR 8/1) silt coats on faces of peds; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, many fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, and common fine faint gray (10YR 6/1) iron depletions throughout; moderately acid; clear wavy boundary.

Btg4—32 to 43 inches; light brownish gray (10YR 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate medium and coarse subangular blocky; firm; few distinct grayish brown (10YR 5/2) clay films in root channels and/or pores and very few prominent white (10YR 8/1) silt coats on vertical faces of peds; many fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, common

fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine faint gray (10YR 6/1) iron depletions throughout; moderately acid; clear wavy boundary.

BCtg—43 to 50 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few prominent grayish brown (10YR 5/2) clay films in root channels and/or pores; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation and common fine prominent brownish yellow (10YR 6/8) masses of iron accumulation throughout; moderately acid; clear wavy boundary.

Cg1—50 to 74 inches; light brownish gray (10YR 6/2) silt loam; massive; firm; few prominent dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium and coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation and common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout; slightly acid; clear wavy boundary.

Cg2—74 to 85 inches; light brownish gray (10YR 6/2) silt loam; massive; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 50 inches
Depth to base of diagnostic horizon: 40 to 60 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—5 or 6
Chroma—1 or 2
Texture—silt loam or silt

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam

16A—Rushville silt loam, 0 to 2 percent slopes

Setting

Landform: Interfluves
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Rushville and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Rubio soils, which have a darker surface layer than that of the Rushville soil
- Soils on terraces

Dissimilar soils:
- The somewhat poorly drained Clarksdale soils, which have a darker surface layer than that of the Rushville soil; in the slightly higher positions on the landform
- The somewhat poorly drained Keomah soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Sarpy Series

Taxonomic classification: Mixed, mesic Typic Udipsamments

Typical Pedon for MLRA 115C

Sarpy sand, 0 to 2 percent slopes, occasionally flooded, at an elevation of 473 feet; 2,290 feet east

and 1,100 feet south of the northwest corner of sec. 22, T. 2 N., R. 9 W.; USGS Lima, Illinois, topographic quadrangle; lat. 40 degrees 9 minutes 9 seconds N. and long. 91 degrees 25 minutes 40 seconds W., NAD 27:

Ap—0 to 9 inches; 70 percent brown (10YR 4/3) and 30 percent dark grayish brown (10YR 4/2) sand, pale brown (10YR 6/3) dry; weak fine subangular blocky structure parting to single grain; very friable; neutral; clear smooth boundary.

C1—9 to 17 inches; stratified, 90 percent brown (10YR 5/3) and 10 percent very dark grayish brown (10YR 3/2) loamy sand; single grain; loose; neutral; clear smooth boundary.

C2—17 to 28 inches; 55 percent brown (10YR 5/3) and 35 percent pale brown (10YR 6/3) sand; single grain; loose; common medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation and few fine distinct very dark brown (10YR 2/2) masses of iron accumulation throughout; neutral; gradual smooth boundary.

C3—28 to 41 inches; 55 percent pale brown (10YR 6/3) and 40 percent brown (10YR 5/3) loamy sand; single grain; loose; common medium distinct brown (7.5YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

C4—41 to 48 inches; brown (10YR 4/3) sandy loam; massive; very friable; few faint brown (10YR 5/3) sand coats in root channels and/or pores; many medium distinct brown (7.5YR 4/4) masses of iron accumulation throughout and few fine distinct gray (10YR 5/1) iron depletions between peds; neutral; clear smooth boundary.

C5—48 to 59 inches; light olive brown (2.5Y 5/3) loamy sand; single grain; loose; many medium distinct brown (7.5YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

C6—59 to 65 inches; light olive brown (2.5Y 5/3) loamy sand; single grain; loose; many medium distinct brown (7.5YR 4/4) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 4 to 9 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 3
Texture—sand, loamy sand, loamy fine sand, fine sand, or fine sandy loam

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—loamy fine sand, loamy sand, fine sand, sand, silt loam, or sandy loam

8092A—Sarpy sand, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Alluvial ridges
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Sarpy and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that are stratified at the surface
- Soils that have more clay below a depth of 40 inches than the Sarpy soil
- Soils that have slopes of more than 2 percent
- Zumbro soils, which have a darker surface soil than that of the Sarpy soil

Dissimilar soils:
- Soils that are not subject to flooding
- Soils that are somewhat poorly drained
- Soils that have more clay throughout than the Sarpy soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Slacwater Series

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Mollic Fluvaquents

Typical Pedon for MLRA 115C

Slacwater silt loam, in an area of Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration, at an elevation of 470 feet; 120 feet east and 50 feet north of the southwest corner of sec. 15, T. 2 S., R. 9 W.; USGS Quincy West, Illinois, topographic quadrangle; lat. 39 degrees 53 minutes 33 seconds N. and long. 91 degrees 26 minutes 3 seconds W., NAD 27:

AC—0 to 12 inches; stratified, 90 percent very dark gray (2.5Y 3/1) and 5 percent grayish brown (2.5Y 5/2) silt loam, light brownish gray (2.5Y 6/2) dry; weak medium platy structure parting to moderate fine granular; friable; few very fine roots; common prominent brown (7.5YR 4/4) masses of iron accumulation between peds; slightly effervescent; slightly alkaline; clear smooth boundary.

Cg1—12 to 25 inches; stratified, 89 percent very dark gray (2.5Y 3/1) and 5 percent grayish brown (2.5Y 5/2) silty clay loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few very fine roots; very few faint black (10YR 2/1) organic coats in root channels and/or pores; common prominent brown (7.5YR 4/3) masses of iron accumulation and few prominent brown (7.5YR 4/4) masses of iron accumulation between peds; slightly effervescent; slightly alkaline; clear smooth boundary.

Cg2—25 to 35 inches; stratified, 94 percent very dark gray (5Y 3/1) and 1 percent grayish brown (2.5Y 5/2) silty clay loam; weak medium platy structure parting to moderate very fine subangular blocky; friable; very few faint black (10YR 2/1) organic coats in root channels and/or pores; common prominent brown (7.5YR 4/4) masses of iron accumulation between peds; slightly effervescent; slightly alkaline; gradual smooth boundary.

Cg3—35 to 64 inches; stratified, 94 percent very dark gray (5Y 3/1) and 1 percent grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; very few faint black (10YR 2/1) organic coats in root channels and/or pores; common prominent brown (7.5YR 4/4) masses of iron accumulation between peds; slightly effervescent; slightly alkaline; clear smooth boundary.

Cg4—64 to 76 inches; very dark gray (2.5Y 3/1) silty clay loam; moderate medium subangular blocky structure; friable; few prominent brown (7.5YR 4/4) masses of iron accumulation between peds; slightly effervescent; slightly alkaline; clear smooth boundary.

Cg5—76 to 80 inches; stratified, 64 percent very dark gray (2.5Y 3/1) and 35 percent dark grayish brown (2.5Y 4/2) silty clay loam; massive; very friable; few prominent brown (7.5YR 4/4) masses of iron accumulation between peds; slightly effervescent; slightly alkaline.

MLRA Series Range in Characteristics

Depth to carbonates: Less than 10 inches
Slope range: 0 to 2 percent

AC, Ap, or A horizon:
Hue—10YR or 2.5Y
Value—2 to 4
Chroma—1 to 3
Texture—silt loam or silty clay loam

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—2 to 7
Chroma—1 to 6
Texture—silt loam or silty clay loam

3877L—Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Blake—rises; Slacwater—flood plains
Position on the landform: Blake—summits; Slacwater—low-lying areas
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Blake—somewhat poorly drained; Slacwater—poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Blake and similar soils: 45 percent
Slacwater and similar soils: 45 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately intermingled that mapping them separately was not practical.

Similar soils:
- Raveenwash soils, which have a lighter colored

surface soil and have more sand and less clay throughout the profile; in positions adjacent to the stream channel
- Soils that are not stratified in the surface layer
- Soils that are in the slightly higher positions and are subject to occasional flooding
- Soils that have more clay in the upper part
- Soils that have more sand in the underlying material

Dissimilar soils:
- Soils that are moderately well drained
- Soils that do not have carbonates

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Sparta Series

Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls

Typical Pedon for MLRA 115C

Sparta loamy sand, 1 to 6 percent slopes, at an elevation of 487 feet; 1,510 feet north and 2,290 feet east of the southwest corner of sec. 21, T. 3 S., R. 8 W.; USGS Marblehead, Illinois, topographic quadrangle; lat. 39 degrees 47 minutes 28 seconds N. and long. 91 degrees 19 minutes 55 seconds W., NAD 27:

Ap—0 to 9 inches; very dark brown (10YR 2/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; common very fine roots; neutral; clear smooth boundary.

A—9 to 18 inches; very dark brown (10YR 2/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; common very fine roots; slightly acid; clear smooth boundary.

AB—18 to 23 inches; dark brown (10YR 3/3) loamy sand, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; common black (10YR 2/1) organic coats on faces of peds; slightly acid; clear smooth boundary.

Bw—23 to 34 inches; brown (10YR 4/3) loamy sand; weak fine subangular blocky structure parting to weak fine granular; very friable; few faint dark brown (10YR 3/3) organic coats on faces of peds; slightly acid; clear smooth boundary.

C1—34 to 39 inches; yellowish brown (10YR 5/6) sand; single grain; loose; 1 percent gravel; slightly acid; clear smooth boundary.

C2—39 to 60 inches; yellowish brown (10YR 5/6) sand; single grain; loose; 5 percent gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to base of diagnostic horizon: 24 to 45 inches
Slope range: 1 to 6 percent

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 or 3
Chroma—1 or 2
Texture—loamy fine sand, loamy sand, fine sand, or sand
Content of rock fragments—0 to 10 percent

Bw horizon:
Hue—10YR or 7.5YR
Value—3 to 6
Chroma—3 to 6
Texture—loamy fine sand, loamy sand, fine sand, or sand
Content of rock fragments—0 to 10 percent

C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sand or fine sand
Content of rock fragments—0 to 10 percent

88B—Sparta loamy sand, 1 to 6 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Stream terraces

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Sandy outwash

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Sparta and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:

• Soils that have a lighter colored surface soil than that of the Sparta soil
• Soils that have slopes of more than 5 percent

Dissimilar soils:

• Soils that have more clay in the surface layer and subsoil than the Sparta soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Stookey Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115C

Stookey silt loam, 2 to 5 percent slopes, at an elevation of 595 feet; 2,100 feet south and 1,125 feet east of the northwest corner of sec. 6, T. 1 N., R. 8 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 6 minutes 10 seconds N. and long. 91 degrees 22 minutes 32.6 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; moderate thin platy structure parting to weak fine granular; friable; many fine and medium roots; slightly acid; abrupt smooth boundary.

BE—7 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine subangular blocky structure; friable; many fine roots; few faint brown (10YR 4/3) clay films lining pores and few distinct dark brown (10YR 3/3) organic coats on faces of peds; common fine distinct light brownish gray (10YR 6/2) clay depletions between peds; neutral; clear smooth boundary.

Bt1—10 to 18 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; many medium and common coarse roots; few faint dark yellowish brown (10YR 3/4) clay films on faces of peds; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear wavy boundary.

Bt2—18 to 27 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common medium roots; common distinct brown (10YR 4/3) clay films on faces of peds and common distinct dark yellowish brown (10YR 3/4) clay films in root channels and/or pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear wavy boundary.

Bt3—27 to 34 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few fine roots; few distinct dark yellowish brown (10YR 3/4) clay films lining pores and few distinct brown (10YR 4/3) clay films on faces of peds; common fine faint pale brown (10YR 6/3) iron depletions throughout; slightly acid; clear wavy boundary.

Bt4—34 to 43 inches; yellowish brown (10YR 5/4) silt loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few faint dark yellowish brown (10YR 4/4) clay films in root channels and/or pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine faint pale brown (10YR 6/3) iron depletions throughout; moderately acid; clear wavy boundary.

Bt5—43 to 48 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; very friable; few very fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint pale brown (10YR 6/3) iron depletions throughout; slightly acid; gradual wavy boundary.

BC1—48 to 56 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; very friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films lining pores; common fine faint pale brown (10YR 6/3) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron and manganese accumulation throughout; moderately acid; clear wavy boundary.

BC2—56 to 65 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, common fine faint light yellowish brown (10YR 6/4) masses of iron accumulation throughout, and common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid; gradual wavy boundary.

C—65 to 84 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation throughout, common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine faint light yellowish brown (10YR 6/4) masses of iron accumulation throughout, and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: More than 40 inches
Slope range: 1 to 60 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam or silt

E or BE horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silt

Bt horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silt

216B—Stookey silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits and head slopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Stookey and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Mannon soils, which have a darker surface layer than that of the Stookey soil
• Winfield soils, which have more clay in the subsoil than the Stookey soil

Dissimilar soils:
• Soils that are somewhat poorly drained; in the less sloping positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

216C2—Stookey silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Stookey soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Stookey and similar soils: 100 percent

Similar soils:
• Mannon soils, which have a darker surface layer than that of the Stookey soil
• Severely eroded soils that have more clay in the surface layer than the Stookey soil

• Timula soils, which have carbonates at a depth of 20 to 40 inches

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

216C3—Stookey silt loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Stookey soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Stookey and similar soils: 100 percent

Similar soils:
• Moderately eroded soils that have less clay in the surface layer than the Stookey soil
• Timula soils, which have carbonates at a depth of 20 to 40 inches

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

216D2—Stookey silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Stookey soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Stookey and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have more clay in the surface layer than the Stookey soil
• Timula soils, which have carbonates at a depth of 20 to 40 inches

Dissimilar soils:
• Keswick soils, which have more clay throughout than the Stookey soil; in areas downslope from the Stookey soil
• Soils that have carbonates at a depth of less than 20 inches
• Soils that have more sand in the lower part of the subsoil than the Stookey soil; in areas downslope from the Stookey soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

216D3—Stookey silt loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess
Special feature: The Stookey soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Moderately eroded soils that have less clay in the surface layer than the Stookey soil
- Timula soils, which have carbonates at a depth of 20 to 40 inches

Dissimilar soils:
- Keswick soils, which have more clay throughout than the Stookey soil; in areas downslope from the Stookey soil
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have more sand in the lower part of the subsoil than the Stookey soil; in areas downslope from the Stookey soil
- Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

816B—Stookey-Timula-Orthents complex, 1 to 7 percent slopes

Setting

Landform: Stookey and Timula—interfluves
Position on the landform: Stookey—summits and head slopes; Timula—shoulders and backslopes; Orthents—cut and filled areas and borrow areas
Type of landscape: Uplands
Special features: These soils occur in areas of urban development in or near Quincy. They are used as sites for buildings, streets, sidewalks, and other structures.

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Stookey and Timula—loess; Orthents—silty material derived from former soil layers and silty underlying material

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and similar soils: 45 percent
Timula and similar soils: 25 percent
Orthents and similar soils: 20 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately intermingled that mapping them separately was not practical.

Similar soils:
- Mannon soils, which have a darker surface layer
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- Soils that are somewhat poorly drained

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

816D—Stookey-Timula-Orthents complex, 7 to 15 percent slopes

Setting

Landform: Stookey and Timula—interfluves
Position on the landform: Stookey—shoulders and backslopes; Timula—backslopes; Orthents—cut and filled areas and borrow areas
Type of landscape: Uplands
Special features: These soils occur in areas of urban

development in or near Quincy. They are used as sites for buildings, streets, sidewalks, and other structures.

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Stookey and Timula—loess; Orthents—silty material derived from former soil layers and silty underlying material

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey soil: 45 percent
Timula soil: 25 percent
Orthents: 20 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately intermingled that mapping them separately was not practical.

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- Lacrescent soils, which have more rock fragments throughout than the major soils; in areas downslope from the major soils
- Lindley soils, which have more sand throughout than the major soils; in areas downslope from the major soils

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

856F—Stookey and Timula soils, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and Timula soils: 80 percent
Dissimilar soils: 20 percent
Note: A single area of this map unit may consist of either the Stookey or Timula soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- Goss soils, which have more clay and rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lacrescent soils, which have more rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lindley soils, which have more sand throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

856G—Stookey and Timula soils, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and Timula soils: 80 percent
Dissimilar soils: 20 percent
Note: A single area of this map unit may consist of either the Stookey or Timula soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- Goss soils, which have more clay and rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lacrescent soils, which have more rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lindley soils, which have more sand throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Tice Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon for MLRA 115C (Official Series Description)

Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 470 feet; 1,670 feet north and 990 feet west of the southeast corner of sec. 22, T. 2 S., R. 9 W.; USGS Quincy West, Illinois, topographic quadrangle; lat. 39 degrees 52 minutes 56 seconds N. and long. 91 degrees 25 minutes 7 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak medium granular; firm; common very fine roots throughout; neutral; abrupt smooth boundary.

A—9 to 14 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; firm; few very fine roots throughout; few fine faint brown (10YR 4/3) masses of iron accumulation throughout; neutral; clear smooth boundary.

BA—14 to 19 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; common fine distinct brown (7.5YR 4/3) masses of iron accumulation and few fine faint grayish brown (10YR 5/2) iron depletions throughout; neutral; clear smooth boundary.

Bw—19 to 35 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many medium distinct strong brown (7.5YR 4/6) masses of iron accumulation and few fine distinct grayish brown (10YR 5/2) iron depletions throughout; moderately acid; clear smooth boundary.

Bg1—35 to 44 inches; dark grayish brown (10YR 4/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coats on faces of peds; many medium distinct strong brown (7.5YR 4/6) masses of iron accumulation throughout; moderately acid; gradual smooth boundary.

Bg2—44 to 61 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure; firm; common distinct very dark gray (10YR 3/1) organic coats on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

Bg3—61 to 80 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure; firm; common distinct very dark gray (10YR 3/1) organic coats on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Depth to base of diagnostic horizon: More than 30 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silty clay loam or silt loam

Bw or Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 to 4
Texture—silty clay loam or silt loam

Cg or C horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3
Texture—stratified silty clay loam, clay loam, loam, sandy loam, or silt loam

8284A—Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Tice and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lawson soils, which have a thicker dark surface soil than that of the Tice soil
- Riley soils, which have more sand throughout than the Tice soil
- Soils that have less clay in the upper part than the Tice soil
- Soils that have sand at the surface
- Wakeland soils, which have a light-colored surface layer and have less clay in the upper part than the Tice soil

Dissimilar soils:
- The poorly drained Beaucoup soils in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Timewell Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon for MLRA 115C (Official Series Description)

Timewell silt loam, in an area of Timewell and Ipava soils, 0 to 2 percent slopes, at an elevation of 750 feet; 271 feet north and 1,808 feet east of the southwest corner of sec. 7, T. 1 S., R. 4 W.; USGS Kellerville, Illinois, topographic quadrangle; lat. 39 degrees 59 minutes 20 seconds N. and long. 90 degrees 54 minutes 20 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.
A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium platy structure parting to moderate fine granular; friable; few fine roots; neutral; abrupt smooth boundary.
AE—12 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate thin platy structure parting to weak fine granular; friable; few fine roots; common fine distinct light gray (10YR 7/1) clay depletions throughout, few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, and few fine distinct black (7.5YR 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.
Bt1—18 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many distinct very

dark gray (10YR 3/1) organo-clay films on faces of peds; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine distinct grayish brown (10YR 5/2) iron depletions throughout, and common fine distinct black (7.5YR 2/1) masses of iron and manganese accumulation throughout; strongly acid; clear smooth boundary.

Bt2—22 to 29 inches; yellowish brown (10YR 5/4) silty clay; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct grayish brown (10YR 5/2) iron depletions throughout, and common fine distinct black (7.5YR 2/1) masses of iron and manganese accumulation throughout; strongly acid; clear smooth boundary.

Btg1—29 to 40 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout, and common fine and medium prominent black (7.5YR 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

Btg2—40 to 48 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds and common distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, and common prominent fine and medium black (7.5YR 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

Btg3—48 to 56 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds and few distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine prominent light yellowish brown (10YR 6/4) masses of iron accumulation throughout, and few fine prominent black (7.5YR 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

BCtg—56 to 67 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium prismatic structure; friable; few fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds and few distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation throughout, and few fine prominent black (7.5YR 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear smooth boundary.

Cg—67 to 80 inches; light gray (5Y 7/1) silt loam; massive; friable; very few distinct very dark gray (10YR 3/1) organic coats in root channels and/or pores; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and few fine prominent black (7.5YR 2/1) masses of iron and manganese accumulation throughout; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 21 inches
Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: 45 to 70 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E or AE horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam, silty clay, or silt loam

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7

Chroma—1 to 6
Texture—silt loam or silty clay loam

855A—Timewell and Ipava soils, 0 to 2 percent slopes

Setting

Landform: Drainage divides
Position on the landform: Broad summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Timewell and Ipava soils and similar soils: 90 percent
Dissimilar soils: 10 percent
Note: A single area of this map unit may consist of either the Timewell or Ipava soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Similar soils:
• Clarksdale soils, which have a thinner dark surface layer than that of the Timewell and Ipava soils

Dissimilar soils:
• The well drained Osco soils, which have less clay in the subsoil than the Timewell and Ipava soils; in the higher positions on the landform
• The poorly drained Rubio soils, which have a thinner dark surface soil than that of the Timewell and Ipava soils; in the slightly lower positions on the landform
• The poorly drained Virden soils in the lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

855B—Timewell and Ipava soils, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Loess
Special feature: The Ipava soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Timewell and Ipava soils and similar soils: 90 percent
Dissimilar soils: 10 percent
Note: A single area of this map unit may consist of either the Timewell or Ipava soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Similar soils:
• Clarksdale soils, which have a thinner dark surface layer than that of the Timewell and Ipava soils

Dissimilar soils:
• The well drained Greenbush soils, which have a thinner dark surface soil than that of the Timewell and Ipava soils and have less clay in the subsoil; in the higher positions on the landform
• Emery soils, which have a thinner dark surface soil than that of the Timewell and Ipava soils and have less clay in the subsoil; in areas downslope from the Timewell and Ipava soils
• Keller soils, which have more clay in the lower part of the subsoil than the Timewell and Ipava soils; in areas downslope from the Timewell and Ipava soils
• The well drained Osco soils, which have less clay in the subsoil than the Timewell and Ipava soils; in the higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section

- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Timula Series

Taxonomic classification: Coarse-silty, mixed, superactive, mesic Typic Eutrudepts

Typical Pedon for MLRA 115C

Timula silt loam, 10 to 18 percent slopes, eroded, at an elevation of 585 feet; 2,500 feet west and 2,240 feet south of the northeast corner of sec. 13, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 4 minutes 35 seconds N. and long. 91 degrees 23 minutes 24 seconds W., NAD 27:

Ap—0 to 5 inches; 90 percent brown (10YR 4/3) and 10 percent yellowish brown (10YR 5/6) silt loam, brownish yellow (10YR 6/6) dry; moderate fine granular structure; friable; common fine roots throughout; neutral; clear smooth boundary.

E—5 to 7 inches; 70 percent yellowish brown (10YR 5/4) and 29 percent light brownish gray (10YR 6/2) silt loam, very pale brown (10YR 7/3) dry; weak thin platy structure parting to weak fine subangular blocky; very friable; few fine roots throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout and few medium distinct black (2.5Y 2/1) iron and manganese concretions lining root channels and/or pores; the light brownish gray matrix color and masses are relict redoximorphic features; neutral; clear smooth boundary.

Bw1—7 to 10 inches; 75 percent yellowish brown (10YR 5/6) and 24 percent light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; very friable; few very fine and fine roots throughout; few faint yellowish brown (10YR 5/4) clay films in root channels and/or pores; few medium distinct yellowish brown (10YR 5/8) masses of iron and manganese accumulations and many medium prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; the light brownish gray matrix color and masses are relict redoximorphic features; neutral; clear wavy boundary.

Bw2—10 to 17 inches; light brownish gray (10YR 6/2) silt loam; weak fine subangular blocky structure; very friable; few fine roots throughout; few fine distinct black (2.5Y 2/1) iron and manganese concretions throughout, common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout; the light brownish gray matrix color and masses are relict redoximorphic features; neutral; clear wavy boundary.

BC—17 to 22 inches; 50 percent yellowish brown (10YR 5/6) and 40 percent light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; very friable; few fine roots throughout; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout and few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation lining root channels and/or pores; the light brownish gray matrix color and masses are relict redoximorphic features; slightly acid; clear wavy boundary.

C1—22 to 39 inches; light brownish gray (10YR 6/2) silt loam; massive; very friable; few very fine roots throughout; few fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation throughout, few fine and medium faint white (10YR 8/1) and medium faint pale yellow (2.5Y 7/3) masses of carbonate throughout, and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; the light brownish gray matrix color and masses are relict redoximorphic features; slightly effervescent; slightly alkaline; clear wavy boundary.

C2—39 to 84 inches; light brownish gray (10YR 6/2) silt loam; massive; very friable; common fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, common fine and medium faint white (10YR 8/1) masses of carbonate throughout, and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; the light brownish gray matrix color and masses are relict redoximorphic features; strongly effervescent; moderately alkaline.

MLRA Series Range in Characteristics

Depth to carbonates: 18 to 36 inches
Depth to base of diagnostic horizon: 18 to 36 inches
Slope range: 1 to 60 percent

Ap or A horizon:
Hue—10YR
Value—3 or 4

Chroma—2 or 3
Texture—silt loam or silt

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silt

Bw horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silt

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—2 to 4
Texture—silt loam or silt

271C2—Timula silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Timula and similar soils: 100 percent

Similar soils:
• Mannon soils, which have a darker surface layer than that of the Timula soil and have more clay in the subsoil; in the higher, less sloping positions on the landform
• Severely eroded soils that have less organic matter in the surface layer than the Timula soil
• Stookey soils, which do not have carbonates within a depth of 60 inches and have more clay in the subsoil than the Timula soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

271D2—Timula silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Timula and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Severely eroded soils that have less organic matter in the surface layer than the Timula soil
• Stookey soils, which do not have carbonates within a depth of 60 inches and have more clay in the subsoil than the Timula soil

Dissimilar soils:
• The moderately well drained Blyton and somewhat poorly drained Wakeland soils on flood plains along drainageways
• Soils that have carbonates within a depth of 20 inches

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

816B—Stookey-Timula-Orthents complex, 1 to 7 percent slopes

Setting

Landform: Stookey and Timula—interfluves
Position on the landform: Stookey—summits and head slopes; Timula—shoulders and backslopes; Orthents—cut and filled areas and borrow areas
Type of landscape: Uplands
Special features: These soils occur in areas of urban development in or near Quincy. They are used as sites for buildings, streets, sidewalks, and other structures.

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Stookey and Timula—loess; Orthents—silty material derived from former soil layers and silty underlying material

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and similar soils: 45 percent
Timula and similar soils: 25 percent
Orthents and similar soils: 20 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately mixed that mapping them separately was not practical.

Similar soils:
- Mannon soils, which have a darker surface layer
- Soils that have slopes of more than 7 percent

Dissimilar soils:
- Soils that are somewhat poorly drained

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

816D—Stookey-Timula-Orthents complex, 7 to 15 percent slopes

Setting

Landform: Stookey and Timula—interfluves
Position on the landform: Stookey—shoulders and backslopes; Timula—backslopes; Orthents—cut and filled areas and borrow areas
Type of landscape: Uplands
Special features: These soils occur in areas of urban development in or near Quincy. They are used as sites for buildings, streets, sidewalks, and other structures.

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Stookey and Timula—loess; Orthents—silty material derived from former soil layers and silty underlying material

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey soil: 45 percent
Timula soil: 25 percent
Orthents: 20 percent
Dissimilar soils: 10 percent
Note: These soils occur as areas so intricately mixed that mapping them separately was not practical.

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- Lacrescent soils, which have more rock fragments throughout than the major soils; in areas downslope from the major soils
- Lindley soils, which have more sand throughout than the major soils; in areas downslope from the major soils

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

856F—Stookey and Timula soils, 18 to 35 percent slopes

Setting

Landform: Interfluves
Position on the landform: Shoulders and backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and Timula soils and similar soils: 80 percent
Dissimilar soils: 20 percent
Note: A single area of this map unit may consist of either the Stookey or Timula soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- Goss soils, which have more clay and rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lacrescent soils, which have more rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lindley soils, which have more sand throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

856G—Stookey and Timula soils, 35 to 60 percent slopes

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Stookey and Timula soils and similar soils: 80 percent
Dissimilar soils: 20 percent
Note: A single area of this map unit may consist of either the Stookey or Timula soil, or it may consist of both soils. The two soils have similar behavioral characteristics for present or anticipated uses in the survey area, and mapping them separately was not considered practical or necessary.

Dissimilar soils:
- Blyton soils on flood plains along drainageways
- Goss soils, which have more clay and rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lacrescent soils, which have more rock fragments throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Lindley soils, which have more sand throughout than the Stookey and Timula soils; in areas downslope from the Stookey and Timula soils
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have outcrops of limestone bedrock

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Titus Series

Taxonomic classification: Fine, smectitic, mesic Vertic Endoaquolls

Typical Pedon for MLRA 115C

Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 470 feet; 2,650 feet west and 2,150 feet south of the northeast corner of sec. 20, T. 2 N., R. 9 W.; USGS Lima, Illinois, topographic quadrangle; lat. 40 degrees 8 minutes 25 seconds N. and long. 91 degrees 27 minutes 55 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; very firm; few fine roots; neutral; clear smooth boundary.

A—7 to 13 inches; dark olive gray (5Y 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; very firm; few fine roots; few fine dark prominent yellowish brown (10YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg1—13 to 25 inches; dark gray (2.5Y 4/1) silty clay; weak fine prismatic structure; very firm; few fine roots; many distinct dark olive gray (5Y 3/2) organo-clay films on faces of peds; common fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg2—25 to 36 inches; dark gray (5Y 4/1) silty clay; weak medium prismatic structure; very firm; few very fine roots; many distinct gray (N 5/0) pressure faces on faces of peds; common fine prominent brown (7.5YR 4/4) masses of iron accumulation and few fine distinct black (10YR 2/1) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg3—36 to 46 inches; dark gray (5Y 4/1) silty clay; weak medium prismatic structure; very firm; few very fine roots; many distinct gray (N 5/0) pressure faces on faces of peds; common fine prominent brown (7.5YR 4/4) masses of iron accumulation and few fine prominent black (10YR 2/1) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg4—46 to 55 inches; dark gray (2.5Y 4/1) silty clay; weak fine prismatic structure; very firm; few very fine roots; many distinct gray (N 5/0) pressure faces on faces of peds; few fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

BCg—55 to 68 inches; dark gray (5Y 4/1) silty clay loam; massive; very firm; few fine dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Cg—68 to 80 inches; dark gray (5Y 4/1) silty clay loam; massive; very firm; many fine prominent brown (7.5YR 4/4) masses of iron accumulation and few fine distinct black (10YR 2/1) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to base of diagnostic horizon: 35 to 70 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam or silty clay

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay or silty clay loam
Content of rock fragments—0 to 2 percent

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam (strata of silt loam or loam in some pedons)
Content of gravel—0 to 15 percent

8404A—Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Titus and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Beaucoup soils, which have less clay in the upper part than the Titus soil
- Soils that have a thicker dark surface soil than that of the Titus soil
- Soils that have more clay in the upper part than the Titus soil

Dissimilar soils:
- The somewhat poorly drained Dupo soils, which have a light-colored surface soil and have more clay in the lower part than the Titus soil; in the higher positions on the landform
- The somewhat poorly drained Tice soils, which have less clay in the upper part than the Titus soil; in the higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Twomile Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Albaqualfs

Typical Pedon for MLRA 115C

Twomile silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 660 feet; 977 feet west and 530 feet south of the northeast corner of sec. 27, T. 1 S., R. 8 W.; USGS Quincy East, Illinois, topographic quadrangle; lat. 39 degrees 57 minutes 44.1 seconds N. and long. 91 degrees 18 minutes 13.7 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many fine and medium roots; neutral; clear smooth boundary.

A—7 to 10 inches; dark grayish brown (10YR 4/2) silt loam, grayish brown (10YR 5/2) dry; moderate thin platy structure parting to moderate fine granular; friable; common fine and medium roots; few fine faint brown (10YR 5/3) clay depletions between peds; neutral; clear wavy boundary.

Eg1—10 to 15 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; common fine roots; common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation throughout, common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and few fine faint light gray (10YR 7/2) clay depletions between peds; neutral; clear wavy boundary.

Eg2—15 to 26 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/1) dry; moderate medium platy structure; friable; few fine roots; many fine and medium distinct dark yellowish brown (10YR 4/6) masses of iron accumulation throughout, common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout, and few fine faint light gray (10YR 7/1) clay depletions between peds; moderately acid; clear wavy boundary.

Btg1—26 to 32 inches; light brownish gray (2.5Y 6/2) silt loam; moderate fine prismatic structure parting to weak fine subangular blocky; friable; few very fine roots; common distinct dark gray (2.5Y 4/1) clay films and common prominent light gray (10YR 7/1) silt coats on faces of peds; many fine and medium distinct dark yellowish brown (10YR 4/6) masses of iron accumulation and common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear wavy boundary.

Btg2—32 to 38 inches; light brownish gray (2.5Y 6/2) silt loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; krotovinas; common distinct dark gray (2.5Y 4/1) clay films on faces of peds and in pores and few prominent light gray (10YR 7/1) silt coats on faces of peds; many fine and medium distinct dark yellowish brown (10YR 4/6) masses of iron accumulation and common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; very strongly acid; clear wavy boundary.

Btg3—38 to 51 inches; dark grayish brown (10YR 4/2) silt loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few distinct dark gray (2.5Y 4/1) clay films on faces of peds and in pores and few prominent light gray (10YR 7/1) silt coats on faces of peds; many fine and medium distinct dark yellowish brown (10YR 3/6) masses of iron accumulation throughout, many fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear wavy boundary.

Btg4—51 to 58 inches; grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few distinct dark gray (2.5Y 4/1) clay films and few prominent light gray (10YR 7/1) silt coats on faces of peds; many fine and medium distinct dark yellowish brown (10YR 3/6) masses of iron accumulation throughout, many fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; moderately acid; clear wavy boundary.

BCg—58 to 80 inches; dark gray (2.5Y 4/1) silt loam; weak medium subangular blocky structure; friable; common distinct dark gray (2.5Y 4/1) clay films lining pores and many prominent light gray (10YR 7/1) silt coats on faces of peds; many fine and

medium prominent dark yellowish brown (10YR 3/6) masses of iron accumulation throughout, many fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout, and common fine faint black (2.5Y 2/1) masses of iron and manganese accumulation throughout; strongly acid.

MLRA Series Range in Characteristics

Combined thickness of the A and E horizons: 24 to 36 inches
Depth to 2B or 2C horizon: More than 40 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

E or Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silt

Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam

Cg or 2Cg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 or 2
Texture—silt loam, loam, silty clay loam, or clay loam

8217A—Twomile silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains, second bottoms
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Twomile and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that are subject to frequent flooding
- Soils in which the subsurface layer is not brittle
- Soils that have more clay in the subsoil than the Twomile soil

Dissimilar soils:
- The somewhat poorly drained Wakeland soils, which have less clay in the upper part than the Twomile soil; in the lower positions on flood plains

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Ursa Series

Taxonomic classification: Fine, smectitic, mesic Chromic Vertic Hapludalfs

Typical Pedon for MLRA 115C (Official Series Description)

Ursa silt loam, moderately wet, 10 to 18 percent slopes, eroded, at an elevation of 665 feet; 1,000 feet east and 740 feet north of the southwest corner of sec. 6, T. 1 N., R. 4 W.; USGS Clayton, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 34.3 seconds N. and long. 90 degrees 54 minutes 34.3 seconds W., NAD 27:

Ap—0 to 6 inches; grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine and medium roots throughout; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation lining root channels and pores; slightly acid; abrupt smooth boundary.

Bt1—6 to 10 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots throughout; common distinct yellowish brown (10YR 5/4) clay films and very pale brown (10YR 7/3) silt coats on faces of peds; few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; strongly acid; clear wavy boundary.

2Bt2—10 to 15 inches; yellowish brown (10YR 5/8)

silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; many prominent brown (7.5YR 5/4) clay films on faces of peds; common fine faint strong brown (7.5YR 5/8) masses of iron accumulation throughout; 5 percent fine gravel; strongly acid; clear wavy boundary.

2Bt3—15 to 22 inches; yellowish brown (10YR 5/8) clay; weak coarse subangular blocky structure; firm; few fine roots throughout; few prominent brown (7.5YR 4/4) clay films in root channels and/or pores; common fine faint strong brown (7.5YR 5/8) masses of iron accumulation and few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; 5 percent fine gravel; moderately acid; clear wavy boundary.

2Bt4—22 to 28 inches; yellowish brown (10YR 5/6) clay; weak coarse prismatic structure; very firm; few fine roots throughout; common distinct pale brown (10YR 6/3) clay films and common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt5—28 to 35 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure; very firm; few fine roots in cracks; common prominent light brownish gray (10YR 6/2) clay films in root channels and/or pores; common fine faint strong brown (7.5YR 4/6) masses of iron accumulation and common fine prominent black (2.5Y 2/1) masses of iron and manganese accumulation throughout; neutral; clear wavy boundary.

2Btg1—35 to 46 inches; light brownish gray (2.5Y 6/2) clay loam; moderate coarse prismatic structure; very firm; few fine roots in cracks; many faint light brownish gray (10YR 6/2) clay films on faces of peds; few fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation and few medium distinct black (2.5Y 2/1) masses of iron and manganese accumulation throughout; 5 percent fine gravel; neutral; clear wavy boundary.

2Btg2—46 to 56 inches; light brownish gray (2.5Y 6/2) clay loam; moderate coarse prismatic structure parting to strong medium subangular blocky; very firm; few very fine roots in cracks; many faint light brownish gray (10YR 6/2) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation lining root channels and pores and few fine distinct black (2.5Y 2/1) masses of iron and manganese accumulation on faces of peds and between pores; 1 percent fine rounded quartz pebbles; slight effervescence on faces of peds; neutral; clear wavy boundary.

2BCt1—56 to 74 inches; light yellowish brown (2.5Y 6/4) clay loam; strong medium and coarse subangular blocky structure; very firm; many distinct light brownish gray (10YR 6/2) clay films on faces of peds; many medium and coarse distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout and common fine to coarse distinct black (2.5Y 2/1) masses of iron and manganese accumulation on faces of peds; 5 percent fine gravel; neutral; clear wavy boundary.

2BCt2—74 to 90 inches; yellowish brown (10YR 5/6) clay loam; strong coarse prismatic structure; very firm; many prominent light brownish gray (2.5Y 6/2) clay films on faces of peds; many medium and coarse prominent black (2.5Y 2/1) masses of iron and manganese accumulation on faces of peds; about 5 percent fine gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the loess: Less than 20 inches
Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: More than 50 inches
Slope range: 5 to 18 percent

Ap or A horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam, loam, silty clay loam, or clay loam

Bt, 2Bt, or 2Btg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—clay loam, clay, silty clay, or silty clay loam
Content of rock fragments—0 to 10 percent

C or 2C horizon (if it occurs):
Hue—10YR, 7.5YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—clay loam, clay, silty clay, or loam
Content of rock fragments—2 to 10 percent

655C2—Ursa silt loam, moderately wet, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Ursa and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Hickory soils, which have less clay in the subsoil than the Ursa soil; in the more sloping positions
• Severely eroded soils that have more clay in the surface layer than the Ursa soil

Dissimilar soils:
• The somewhat poorly drained Atlas soils
• The somewhat poorly drained Bunkum soils, which have less clay in the subsoil than the Ursa soil; in areas upslope from the Ursa soil
• The poorly drained Coatsburg soils, which have a darker surface soil than that of the Ursa soil
• Fishhook soils, which have less clay in the upper part of the subsoil than the Ursa soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

655C3—Ursa silty clay loam, moderately wet, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Paleosol formed in glacial till
Special feature: The Ursa soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Ursa and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Hickory soils, which have less clay in the subsoil than the Ursa soil; in the more sloping positions on the landform
• Moderately eroded soils that have less clay in the surface layer than the Ursa soil

Dissimilar soils:
• The somewhat poorly drained Atlas soils
• The somewhat poorly drained Bunkum soils, which have less clay in the subsoil than the Ursa soil; in areas upslope from the Ursa soil
• Fishhook soils, which have less clay in the upper part of the subsoil than the Ursa soil
• Soils that have more sand throughout than the Ursa soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

655D2—Ursa silt loam, moderately wet, 10 to 18 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained

Parent material: Paleosol formed in glacial till

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Ursa and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Hickory soils, which have less clay in the subsoil than the Ursa soil; in the more sloping positions on the landform
• Severely eroded soils that have more clay in the surface layer than the Ursa soil

Dissimilar soils:
• The somewhat poorly drained Atlas soils
• The somewhat poorly drained Bunkum soils, which have less clay in the subsoil than the Ursa soil; in areas upslope from the Ursa soil
• Marseilles soils, which have shale in the lower part; in areas downslope from the Ursa soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

655D3—Ursa silty clay loam, moderately wet, 10 to 18 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Backslopes
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Paleosol formed in glacial till
Special feature: The Ursa soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Ursa and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Hickory soils, which have less clay in the subsoil than the Ursa soil; in the more sloping positions on the landform
• Moderately eroded soils that have less clay in the surface layer than the Ursa soil

Dissimilar soils:
• The somewhat poorly drained Atlas soils
• The somewhat poorly drained Bunkum soils, which have less clay in the subsoil than the Ursa soil; in areas upslope from the Ursa soil
• Marseilles soils, which have shale in the lower part; in areas downslope from the Ursa soil
• Soils that have more sand throughout than the Ursa soil
• Wakeland soils on flood plains along drainageways

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Vesser Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon for MLRA 115C

Vesser silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 480 feet; 360 feet west and 220 feet south of the northeast corner of sec. 4, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 6 minutes 37 seconds N. and long. 91 degrees 26 minutes 15 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; friable; neutral; abrupt smooth boundary.
A—8 to 14 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to weak medium granular; friable; common fine distinct dark brown (7.5YR 3/4)

masses of iron accumulation throughout; neutral; gradual smooth boundary.

Eg1—14 to 20 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; very few distinct very dark gray (10YR 3/1) organic coats on faces of peds; common medium faint gray (10YR 5/1) clay depletions between peds and common fine distinct dark brown (7.5YR 3/4) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

Eg2—20 to 26 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak thick platy structure parting to weak very fine subangular blocky; friable; very few distinct very dark gray (10YR 3/1) organic coats on faces of peds; common medium faint gray (10YR 6/1) clay depletions between peds and common fine distinct brown (7.5YR 4/4) masses of iron accumulation throughout; slightly acid; gradual smooth boundary.

Btg1—26 to 34 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure; friable; very few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and few distinct gray (10YR 6/1) silt coats in root channels and/or pores; common medium distinct dark brown (7.5YR 3/4) masses of iron accumulation throughout; moderately acid; gradual smooth boundary.

Btg2—34 to 48 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure; firm; very few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and very few distinct light brownish gray (10YR 6/2) silt coats in root channels and/or pores; common medium distinct dark brown (7.5YR 3/4) masses of iron accumulation throughout; moderately acid; gradual smooth boundary.

Btg3—48 to 58 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure; firm; few distinct light brownish gray (10YR 6/2) silt coats in root channels and/or pores and very few distinct very dark gray (10YR 3/1) clay films on faces of peds; common medium distinct dark brown (7.5YR 3/4) masses of iron accumulation throughout; slightly acid; clear smooth boundary.

BCg—58 to 80 inches; gray (10YR 5/1) silty clay loam; weak coarse prismatic structure; firm; very few distinct dark gray (10YR 4/1) clay films on faces of peds and very few distinct light brownish gray (10YR 6/2) silt coats in root channels and/or pores; common medium distinct dark brown (7.5YR 3/4) masses of iron accumulation throughout; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates (if they occur): More than 60 inches
Depth to base of diagnostic horizon: More than 45 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E or Eg horizon:
Hue—10YR
Value—3 to 5
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 or 2
Texture—silty clay loam

3396A—Vesser silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Vesser and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that do not have a gray subsurface layer
- Soils that have a light-colored surface soil
- Twomile soils, which have a light-colored surface soil; in the slightly higher positions on the landform

Dissimilar soils:
- The somewhat poorly drained Wakeland soils, which have a light-colored surface soil and have less clay

throughout than the Vesser soil; in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

8396A—Vesser silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Low-lying areas

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Vesser and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Beaucoup soils, which do not have a gray subsurface layer
- Soils that have less clay in the upper part of the subsoil than the Vesser soil
- Soils that have a light-colored surface soil

Dissimilar soils:
- The somewhat poorly drained Tice soils, which do not have a gray subsurface layer; in the slightly higher positions on the landform
- The somewhat poorly drained Wakeland soils, which have a light-colored surface soil; in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Virden Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon for MLRA 115C (Official Series Description)

Virden silty clay loam, 0 to 2 percent slopes, at an elevation of 699 feet; 140 feet west and 54 feet north of the southeast corner of sec. 3, T. 2 N., R. 6 W.; USGS Bowen, Illinois, topographic quadrangle; lat. 40 degrees 10 minutes 52 seconds N. and long. 91 degrees 4 minutes 5 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; firm; slightly alkaline; abrupt smooth boundary.

A—8 to 16 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; firm; moderately acid; clear smooth boundary.

Btg1—16 to 23 inches; very dark gray (10YR 3/1) silty clay, grayish brown (10YR 5/2) dry; strong fine angular blocky structure; firm; few faint black (10YR 2/1) clay films on faces of peds; few fine faint black (10YR 2/1) iron and manganese concretions throughout; slightly acid; clear smooth boundary.

Btg2—23 to 34 inches; gray (5Y 5/1) silty clay loam; weak coarse prismatic structure parting to moderate medium angular blocky; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/6) masses of iron accumulation and few fine prominent black (10YR 2/1) masses of iron and manganese accumulation throughout; slightly acid; clear smooth boundary.

Btg3—34 to 42 inches; gray (5Y 5/1) silty clay loam; weak and moderate coarse prismatic structure parting to moderate coarse angular blocky; firm; few distinct dark gray (5Y 4/1) clay films on faces of peds; common medium prominent light olive brown (2.5Y 5/6) masses of iron accumulation and few fine prominent black (10YR 2/1) masses of iron and manganese accumulation throughout; neutral; clear smooth boundary.

Btg4—42 to 49 inches; gray (5Y 5/1) silty clay loam; moderate coarse prismatic structure parting to weak coarse angular blocky; firm; very few distinct dark gray (N 4/0) clay films on faces of peds; many medium distinct olive brown (2.5Y 4/4) masses of iron accumulation throughout; neutral; gradual smooth boundary.

BCg—49 to 60 inches; gray (5Y 5/1) silty clay loam;

massive; firm; common medium distinct olive brown (2.5Y 4/4) masses of iron accumulation throughout; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates (if they occur): More than 50 inches
Depth to base of diagnostic horizon: 40 to 60 inches
Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam

Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 4
Texture—silty clay loam, silty clay, or silt loam

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4
Texture—silty clay loam or silt loam

50A—Virden silty clay loam, 0 to 2 percent slopes

Setting

Landform: Drainage divides
Position on the landform: Low-lying areas
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Poorly drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Virden and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Rubio soils, which have a thinner dark surface layer than that of the Virden soil and have a gray subsurface layer
• Other soils that have a gray subsurface layer
• Soils that have more clay in the surface layer than the Virden soil
• Soils that have a dark surface soil more than 24 inches thick

Dissimilar soils:
• The somewhat poorly drained Timewell and Ipava soils in the slightly higher positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Wakeland Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents

Typical Pedon for MLRA 115C

Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 645 feet; 1,240 feet east and 840 feet north of the southwest corner of sec. 5, T. 1 S., R. 6 W.; USGS Camp Point, Illinois, topographic quadrangle; lat. 40 degrees 0 minutes 28 seconds N. and long. 91 degrees 7 minutes 11 seconds W., NAD 27:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, very pale brown (10YR 7/3) dry; weak fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.
A—6 to 10 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; weak fine granular structure; friable; few fine roots; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation throughout, common fine distinct black (10YR 2/1) masses of iron and manganese accumulation throughout, and common fine faint grayish brown (10YR 5/2) iron depletions throughout; moderately acid; abrupt smooth boundary.
Cg1—10 to 21 inches; stratified, 88 percent dark grayish brown (10YR 4/2) and 2 percent light yellowish brown (10YR 6/4) silt loam; weak fine granular structure; friable; few very fine roots; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint gray (10YR 5/1) iron depletions throughout; slightly acid; gradual smooth boundary.
Cg2—21 to 35 inches; stratified, 88 percent dark grayish brown (10YR 4/2) and 2 percent grayish

brown (10YR 5/2) silt loam; weak very fine granular structure; friable; common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint gray (10YR 5/1) iron depletions throughout; slightly acid; gradual smooth boundary.

Cg3—35 to 50 inches; dark gray (10YR 4/1) silt loam; massive; friable; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation throughout, few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, and common fine faint gray (10YR 5/1) iron depletions throughout; moderately acid; gradual smooth boundary.

Cg4—50 to 65 inches; dark gray (10YR 4/1) silt loam; massive; friable; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and common fine faint gray (10YR 5/1) iron depletions throughout; moderately acid; gradual smooth boundary.

Cg5—65 to 80 inches; dark gray (10YR 4/1) silt loam; massive; friable; common fine and medium distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout, few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout, and common fine faint gray (10YR 5/1) iron depletions throughout; slightly acid.

MLRA Series Range in Characteristics

Slope range: 0 to 2 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture—silt loam

Cg or C horizon:
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 7
Chroma—1 to 6
Texture—silt loam or loam

3333A—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Wakeland and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lawson soils, which have a darker surface soil than that of the Wakeland soil
- Soils that have a buried soil at a depth of 20 to 40 inches

Dissimilar soils:
- The moderately well drained Blyton soils in the slightly higher positions on the landform
- The well drained Drury soils, which have more clay in the upper part of the surface soil than the Wakeland soil; in the higher positions on footslopes
- The well drained Haymond soils in the slightly higher positions on the landform
- Poorly drained soils in the slightly lower positions on the landform
- Soils that have more sand throughout than the Wakeland soil
- The poorly drained Twomile soils, which have more clay in the upper part than the Wakeland soil; in the slightly higher positions

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

8333A—Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Parent material: Alluvium

Additional information specific to this map unit, such

as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Wakeland and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Lawson soils, which have a darker surface soil than that of the Wakeland soil and have more clay in the upper part
- Soils that have a buried soil at a depth of 20 to 40 inches

Dissimilar soils:
- The poorly drained Beaucoup soils, which have a darker surface soil than that of the Wakeland soil; in the lower positions on the landform
- The moderately well drained Blyton soils in the slightly higher positions on the landform
- Soils that have more sand throughout than the Wakeland soil
- Soils that are poorly drained

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Wakenda Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon for MLRA 115C

Wakenda silt loam, 2 to 5 percent slopes, at an elevation of 690 feet; 1,070 feet south and 600 feet east of the northwest corner of sec. 21, T. 1 N., R. 8 W.; USGS Mendon, Illinois, topographic quadrangle; lat. 40 degrees 4 minutes 42.5 seconds N. and long. 91 degrees 20 minutes 10 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium platy structure parting to moderate fine granular; friable; neutral; clear smooth boundary.

A—7 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium platy and moderate medium granular structure; friable; neutral; clear smooth boundary.

AB—12 to 16 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; slightly acid; clear smooth boundary.

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds and few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores; moderately acid; clear smooth boundary.

Bt2—21 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—30 to 40 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; few fine faint brown (7.5YR 4/4) masses of iron accumulation throughout; moderately acid; clear smooth boundary.

Bt4—40 to 53 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine faint brown (7.5YR 4/4) masses of iron accumulation throughout, and few fine distinct light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; moderately acid; gradual smooth boundary.

Bt5—53 to 62 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; few fine faint brown (7.5YR 4/4) masses of iron accumulation throughout, few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout, and few fine distinct light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; moderately acid; gradual smooth boundary.

BC—62 to 76 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films in root channels and/or pores; few fine faint brown (7.5YR 4/4) masses of iron accumulation

throughout, few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) masses of iron and manganese accumulation throughout, and few fine distinct light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; slightly acid; clear smooth boundary.

C—76 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few brown (10YR 4/3) clay films in root channels and/or pores; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout, few fine distinct black (10YR 2/1) masses of iron and manganese accumulation throughout, and common fine distinct light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; slightly acid.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to base of diagnostic horizon: More than 40 inches
Slope range: 2 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

C horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

441B—Wakenda silt loam, 2 to 5 percent slopes

Setting

Landform: Ridges
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Wakenda and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• Downsouth soils, which have a thinner dark surface layer than that of the Wakenda soil

Dissimilar soils:
• The somewhat poorly drained Edwardsville soils in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

Winfield Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 115C

Winfield silt loam, 2 to 5 percent slopes, at an elevation of 810 feet; 3,300 feet west and 330 feet north of the southeast corner of sec. 15, T. 5 S., R. 4 W.; USGS Pittsfield, Illinois, topographic quadrangle; lat. 39 degrees 37 minutes 17 seconds N. and long. 90 degrees 50 minutes and 56 seconds W., NAD 27:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium subangular blocky structure; friable; common fine roots throughout; neutral; clear smooth boundary.

BE—8 to 13 inches; brown (10YR 4/3) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots throughout; neutral; clear smooth boundary.

Bt1—13 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots throughout; few faint brown (10YR 4/3) clay films and common distinct light gray (10YR 7/2) silt coats on faces of peds; moderately acid; gradual smooth boundary.

Bt2—21 to 33 inches; dark yellowish brown (10YR 4/4)

silty clay loam; weak medium prismatic structure; firm; few very fine roots throughout; few faint brown (10YR 4/3) clay films on faces of peds; few fine faint brown (10YR 5/3) iron depletions and few fine distinct black (2.5Y 2/1) masses of manganese accumulation throughout; strongly acid; gradual smooth boundary.

Bt3—33 to 44 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few very fine roots throughout; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct black (2.5Y 2/1) manganese concretions and common medium faint brown (10YR 5/3) iron depletions throughout; strongly acid; gradual smooth boundary.

Bt4—44 to 55 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; very few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct black (2.5Y 2/1) manganese concretions and common medium distinct light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few medium distinct light brownish gray (2.5Y 6/2) iron depletions and few fine distinct black (2.5Y 2/1) manganese concretions throughout; moderately acid.

MLRA Series Range in Characteristics

Depth to base of diagnostic horizon: 25 to 65 inches
Slope range: 2 to 10 percent

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam or silty clay loam

E horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt or Btg horizon:
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam or silty clay loam

C or Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

477B—Winfield silt loam, 2 to 5 percent slopes

Setting

Landform: Interfluves
Position on the landform: Summits
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Loess

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Winfield and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Downsouth soils, which have a darker surface layer than that of the Winfield soil
- The well drained Menfro soils
- Soils on terraces

Dissimilar soils:
- The somewhat poorly drained Bethalto soils, which have a darker surface layer than that of the Winfield soil; in the slightly lower positions on the landform
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Winfield soil; in areas downslope from the Winfield soil
- The somewhat poorly drained Caseyville soils in the slightly lower positions on the landform
- The somewhat poorly drained Keomah soils, which have more clay in the subsoil than the Winfield soil; in the slightly lower positions on the landform

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

477C2—Winfield silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Loess
Special feature: The Winfield soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Winfield and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Downsouth soils, which have a darker surface layer than that of the Winfield soil
- The well drained Menfro soils
- Severely eroded soils that have more clay in the surface layer than the Winfield soil
- Soils on terraces

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Winfield soil; in areas downslope from the Winfield soil
- El Dara soils, which have more sand in the subsoil than the Winfield soil; in areas downslope from the Winfield soil
- Keswick soils, which have more clay in the subsoil than the Winfield soil; in areas downslope from the Winfield soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section
- "Engineering" section
- "Soil Properties" section

477C3—Winfield silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Interfluves
Position on the landform: Summits and shoulders
Type of landscape: Uplands

Soil Properties and Qualities

Drainage class: Moderately well drained
Parent material: Loess
Special feature: The Winfield soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the "Soil Properties" section in Part II of this publication.

Composition

Winfield and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- The well drained Menfro soils
- Moderately eroded soils that have less clay in the surface layer than the Winfield soil
- Soils on terraces

Dissimilar soils:
- The somewhat poorly drained Bunkum soils, which have more sand in the lower part of the subsoil than the Winfield soil; in areas downslope from the Winfield soil
- El Dara soils, which have more sand in the subsoil than the Winfield soil; in areas downslope from the Winfield soil
- Keswick soils, which have more clay in the subsoil than the Winfield soil; in areas downslope from the Winfield soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- "Agronomy" section
- "Forestland" section
- "Wildlife Habitat" section

• “Engineering” section
• “Soil Properties” section

Wirt Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Taxadjunct features: The Wirt soils in this survey area do not have the degree of development that is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as coarse-loamy, mixed, superactive, nonacid, mesic Typic Udifluvents.

Typical Pedon for MLRA 115C

Wirt silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 595 feet; 2,500 feet west and 600 feet north of the southeast corner of sec. 9, T. 3 S., R. 7 W.; USGS Payson, Illinois, topographic quadrangle; lat. 47 degrees 31 minutes 31.5 seconds N. and long. 91 degrees 12 minutes 20 seconds W., NAD 27:

AC—0 to 6 inches; stratified, 95 percent dark grayish brown (10YR 4/2) and 5 percent yellowish brown (10YR 5/4) silt loam; moderate fine granular structure; friable; few very fine roots; neutral; clear smooth boundary.
C1—6 to 12 inches; stratified, 60 percent brown (10YR 4/3) and 40 percent yellowish brown (10YR 5/4) silt loam and loamy sand; moderate medium granular structure; very friable; neutral; clear smooth boundary.
C2—12 to 19 inches; stratified, 30 percent brown (10YR 5/3) and 70 percent yellowish brown (10YR 5/4) sandy loam and sand; weak fine subangular blocky structure; very friable; very few faint dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; neutral; clear smooth boundary.
C3—19 to 40 inches; stratified, 65 percent brown (10YR 4/3), and 30 percent brown (10YR 5/3), and 5 percent yellowish brown (10YR 5/4) silt loam and sand; weak medium subangular blocky structure; very friable; very few faint dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; neutral; clear smooth boundary.
C4—40 to 60 inches; stratified, 20 percent brown (10YR 4/3) and 80 percent brown (10YR 5/3) silt loam and sand; massive; very friable; neutral.

MLRA Series Range in Characteristics

Slope range: 0 to 2 percent

AC, Ap, or A horizon:
Hue—10YR
Value—2 to 5
Chroma—2 to 4
Texture—silt loam, loam, fine sandy loam, or very fine sandy loam

C horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 6
Texture—silt loam, loam, fine sandy loam, sandy loam, loamy fine sand, loamy sand, or sand
Content of rock fragments—0 to 35 percent

3226A—Wirt silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Rises
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Wirt and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
• The moderately well drained Blyton soils, which have less sand throughout than the Wirt soil; in positions on the landform similar to those of the Wirt soil
• Haymond soils, which have less sand throughout than the Wirt soil; in positions on the landform similar to those of the Wirt soil

Dissimilar soils:
• Soils that have more sand throughout than the Wirt soil
• The somewhat poorly drained Wakeland soils, which have less sand throughout than the Wirt soil; in positions on the landform similar to those of the Wirt soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Forestland” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Worthen Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon for MLRA 115C (Official Series Description)

Worthen silt loam, 2 to 5 percent slopes, at an elevation of 465 feet; 160 feet south and 640 feet west of the northeast corner of sec. 26, T. 13 N., R. 13 W.; USGS Bedford, Illinois, topographic quadrangle; lat. 39 degrees 33 minutes 0 seconds N. and long. 90 degrees 30 minutes 33 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

A—9 to 20 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak medium granular structure; friable; few very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; slightly acid; clear smooth boundary.

AB—20 to 29 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; few very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coats on faces of peds; neutral; clear smooth boundary.

Bw1—29 to 41 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few very fine and fine roots; common distinct dark brown (10YR 3/3) organic coats on faces of peds, few distinct very dark grayish brown (10YR 3/2) organic coats in root channels and/or pores, and few distinct very pale brown (10YR 7/3) silt coats on faces of peds; neutral; clear smooth boundary.

Bw2—41 to 64 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; few very fine and fine roots; few distinct dark brown (10YR 3/3) organic coats in root channels and/or pores and few distinct very pale brown (10YR 7/3) silt coats on faces of peds; neutral; gradual smooth boundary.

C—64 to 80 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates (if they occur): More than 50 inches
Depth to base of diagnostic horizon: 30 to 80 inches
Slope range: 0 to 5 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bw horizon:
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—2 to 6
Texture—silt loam

C horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam

37A—Worthen silt loam, 0 to 2 percent slopes

Setting

Landform: Alluvial fans
Position on the landform: Footslopes and stream terraces

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Slope alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Worthen and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils in which the dark surface soil is less than 24 inches thick

Dissimilar soils:
- The somewhat poorly drained Littleton soils in the slightly lower positions on the landform
- Soils that contain rock fragments throughout
- Soils that have more sand throughout than the Worthen soil

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

37B—Worthen silt loam, 2 to 5 percent slopes

Setting

Landform: Alluvial fans
Position on the landform: Footslopes and stream terraces

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Slope alluvium
Special feature: The Worthen soil in this map unit has a thinner surface layer than that in the typical pedon.

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Worthen and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils in which the dark surface soil is less than 24 inches thick
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The somewhat poorly drained Littleton soils in the slightly lower positions on the landform
- Soils that have more sand throughout than the Worthen soil
- Soils that contain rock fragments throughout

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

Zumbro Series

Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls

Typical Pedon for MLRA 115C

Zumbro sandy loam, 1 to 6 percent slopes, occasionally flooded, at an elevation of 465 feet; 1,700 feet west and 230 feet south of the northeast corner of sec. 8, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 46 seconds N. and long. 91 degrees 27 minutes 45 seconds W., NAD 27:

Ap—0 to 11 inches; very dark brown (10YR 2/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; many very fine and fine roots; neutral; abrupt smooth boundary.
A1—11 to 19 inches; black (10YR 2/1) loamy sand, very dark grayish brown (10YR 3/2) dry; weak fine granular structure; very friable; common very fine roots; slightly acid; clear smooth boundary.
A2—19 to 24 inches; very dark brown (10YR 2/2) loamy sand, dark brown (10YR 3/3) dry; weak fine granular structure; very friable; common very fine roots; slightly acid; clear smooth boundary.
A3—24 to 33 inches; very dark grayish brown (10YR 3/2) loamy sand, grayish brown (10YR 5/2) dry; single grain; loose; common very fine roots; 1 percent gravel; slightly acid; clear smooth boundary.
Bw—33 to 42 inches; dark yellowish brown (10YR 4/4) sand; single grain; loose; few very fine roots; 2 percent gravel; neutral; clear smooth boundary.
C—42 to 80 inches; yellowish brown (10YR 5/4) sand; single grain; loose; 1 percent mixed gravel; neutral.

MLRA Series Range in Characteristics

Thickness of the mollic epipedon: 24 to 50 inches
Depth to carbonates (if they occur): More than 20 inches
Depth to base of diagnostic horizon: 26 to 60 inches
Slope range: 1 to 6 percent

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam
Content of rock fragments—0 to 15 percent

Bw horizon:
Hue—10YR

Value—2 to 4
Chroma—2 to 4
Texture—sand, fine sand, loamy sand, or loamy fine sand
Content of rock fragments—0 to 15 percent

C horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 5
Texture—sand, fine sand, or coarse sand
Content of gravel—0 to 15 percent

8349B—Zumbro sandy loam, 1 to 6 percent slopes, occasionally flooded

Setting

Landform: Alluvial ridges
Position on the landform: Summits
Type of landscape: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Parent material: Alluvium

Additional information specific to this map unit, such as horizon depth and textures, is available in the “Soil Properties” section in Part II of this publication.

Composition

Zumbro and similar soils: 90 percent
Dissimilar soils: 10 percent

Similar soils:
- Soils that have a light-colored surface layer
- Soils that have a thinner dark surface soil than that of the Zumbro soil
- Soils that have slopes of more than 6 percent

Dissimilar soils:
- Soils that have more clay in the upper part than the Zumbro soil
- Sparta soils, which have a thinner dark surface soil than that of the Zumbro soil; in positions on the landform that are not subject to flooding

Management

For general and detailed information about managing this map unit, see the following sections in Part II of this publication:

- “Agronomy” section
- “Wildlife Habitat” section
- “Engineering” section
- “Soil Properties” section

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. For example, the capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management

increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clayey soil. Silty clay, sandy clay, or clay.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clearcut. A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

Codominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Commercial forest. Forestland capable of producing 20 cubic feet or more per acre per year at the age of culmination of the mean annual increment.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and

management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Consolidated shale. Shale that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry and are not easily crushed.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and

includes everything from the litter on the surface to underlying pure humus.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition

and development because of given physical and biological factors by which it may be differentiated from other stands.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciated uplands. Land areas that were previously covered by continental or alpine glaciers and that are at a higher elevation than the flood plain.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum. A mineral consisting of hydrous calcium sulfate.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material.

Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or

saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mean annual increment (MAI). The average annual increase in volume of a tree during the entire life of the tree.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Overstory. The trees in a forest that form the upper crown cover.

Oxbow. The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly

the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regeneration. The new growth of a natural plant community, developing from seed.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Riser. The relatively short, steeply sloping area below a terrace tread that grades to a lower terrace tread or base level.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to

that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Trafficability. The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

Tread. The relatively flat terrace surface that was cut or built by stream or wave action.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Quincy, Illinois)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	32.1	15.6	23.8	63	-15	13	1.37	0.38	2.16	2	6.1
February---	36.9	20.1	28.5	66	-10	27	1.47	.71	2.13	3	6.4
March------	49.5	31.5	40.5	81	3	147	3.19	1.73	4.48	5	3.3
April------	63.2	43.0	53.1	87	23	404	3.72	2.08	5.18	6	.6
May--------	73.2	52.9	63.0	90	35	713	4.63	2.89	6.20	7	.0
June-------	82.4	62.0	72.2	96	46	967	3.83	2.01	5.43	5	.0
July-------	86.8	66.6	76.7	100	51	1,137	4.55	1.92	6.79	6	.0
August-----	84.0	63.8	73.9	99	48	1,051	3.67	1.73	5.35	5	.0
September--	77.3	56.1	66.7	94	37	801	4.69	2.18	6.85	6	.0
October----	65.8	44.7	55.2	87	26	476	3.36	1.47	4.98	5	.0
November---	51.0	33.7	42.3	76	9	163	2.85	1.19	4.26	5	1.8
December---	36.5	21.4	28.9	66	-9	31	2.35	.94	3.53	4	4.9
Yearly:											
Average---	61.6	42.6	52.1	---	---	---	---	---	---	---	---
Extreme---	---	---	---	101	-17	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,931	39.69	30.73	48.11	59	23.2

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Quincy, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 7	Apr. 21	Apr. 28
2 years in 10 later than--	Apr. 2	Apr. 15	Apr. 23
5 years in 10 later than--	Mar. 25	Apr. 5	Apr. 13
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 28	Oct. 14	Oct. 3
2 years in 10 earlier than--	Nov. 2	Oct. 20	Oct. 9
5 years in 10 earlier than--	Nov. 10	Nov. 1	Oct. 20

Table 3.--Growing Season

(Recorded in the period 1961-90 at Quincy, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	212	187	167
8 years in 10	218	195	175
5 years in 10	230	209	189
2 years in 10	241	223	204
1 year in 10	247	230	211

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Atlas	Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs
Baylis	Fine-silty, mixed, superactive, mesic Typic Paleudalfs
Beaucoup	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Bethalto	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Biggsville	Fine-silty, mixed, superactive, mesic Typic Hapludolls
Blake	Fine-silty, mixed, superactive, calcareous, mesic Aquic Udifluvents
Blyton	Coarse-silty, mixed, superactive, nonacid, mesic Oxyaquic Udifluvents
Bunkum	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
*Caseyville	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Clarksdale	Fine, smectitic, mesic Udollic Endoaqualfs
Coatsburg	Fine, smectitic, mesic Vertic Argiaquolls
Creal	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Crider	Fine-silty, mixed, active, mesic Typic Paleudalfs
Downsouth	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Drury	Fine-silty, mixed, superactive, mesic Dystric Eutrudepts
Dupo	Coarse-silty over clayey, mixed over smectitic, superactive, nonacid, mesic Aquic Udifluvents
Edwardsville	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
El Dara	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Elsah	Loamy-skeletal, mixed, superactive, nonacid, mesic Typic Udifluvents
Emery	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Fishhook	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Gorham	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Goss	Clayey-skeletal, mixed, active, mesic Typic Paleudalfs
Greenbush	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Haymond	Coarse-silty, mixed, superactive, mesic Fluventic Dystrudepts
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Huntsville	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Ipava	Fine, smectitic, mesic Aquic Argiudolls
*Keller	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
*Keswick	Fine, smectitic, mesic Aquertic Chromic Hapludalfs
Lacrescent	Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls
Lamont	Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
*Lenzburg	Fine-loamy, mixed, active, calcareous, mesic Alfic Udarents
Lindley	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Littleton	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Mannon	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Marseilles	Fine-silty, mixed, active, mesic Typic Hapludalfs
Menfro	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Orthents	Fine-silty, mixed, superactive, nonacid, mesic Typic Udorthents
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Passport	Fine-loamy, mixed, superactive, mesic Aquic Hapludalfs
Raveenwash	Coarse-loamy, mixed, superactive, calcareous, mesic Aquic Udifluvents
Riley	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Fluvaquentic Hapludolls
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Rubio	Fine, smectitic, mesic Vertic Albaqualfs
Rushville	Fine, smectitic, mesic Typic Albaqualfs
Sarpy	Mixed, mesic Typic Udipsamments
Slacwater	Fine-silty, mixed, superactive, calcareous, mesic Mollic Fluvaquents
Sparta	Sandy, mixed, mesic Entic Hapludolls
Stookey	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Tice	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Timewell	Fine, smectitic, mesic Aquic Argiudolls
Timula	Coarse-silty, mixed, superactive, mesic Typic Eutrudepts
Titus	Fine, smectitic, mesic Vertic Endoaquolls
Twomile	Fine-silty, mixed, active, mesic Typic Albaqualfs
Ursa	Fine, smectitic, mesic Chromic Vertic Hapludalfs

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Vesser	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Virden	Fine, smectitic, mesic Vertic Argiaquolls
Wakeland	Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents
Wakenda	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Winfield	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
*Wirt	Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Worthen	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Zumbro	Sandy, mixed, mesic Entic Hapludolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
6B2	Fishhook silt loam, 2 to 5 percent slopes, eroded	1,504	0.3
6C2	Fishhook silt loam, 5 to 10 percent slopes, eroded	4,668	0.8
6C3	Fishhook silty clay loam, 5 to 10 percent slopes, severely eroded	3,499	0.6
6D2	Fishhook silt loam, 10 to 18 percent slopes, eroded	879	0.2
6D3	Fishhook silty clay loam, 10 to 18 percent slopes, severely eroded	642	0.1
7C2	Atlas silt loam, 5 to 10 percent slopes, eroded	606	0.1
7C3	Atlas silty clay loam, 5 to 10 percent slopes, severely eroded	2,061	0.4
8E2	Hickory loam, 18 to 25 percent slopes, eroded	7,286	1.3
8F	Hickory silt loam, 18 to 35 percent slopes	15,624	2.8
8G	Hickory silt loam, 35 to 60 percent slopes	777	0.1
16A	Rushville silt loam, 0 to 2 percent slopes	1,168	0.2
17A	Keomah silt loam, 0 to 2 percent slopes	10,450	1.9
17B	Keomah silt loam, 2 to 5 percent slopes	27,013	4.8
37A	Worthen silt loam, 0 to 2 percent slopes	942	0.2
37B	Worthen silt loam, 2 to 5 percent slopes	347	*
50A	Virden silty clay loam, 0 to 2 percent slopes	17,407	3.1
75A	Drury silt loam, 0 to 2 percent slopes	200	*
75B	Drury silt loam, 2 to 5 percent slopes	1,966	0.4
75C2	Drury silt loam, 5 to 10 percent slopes, eroded	1,034	0.2
79B	Menfro silt loam, 2 to 5 percent slopes	8,457	1.5
79C2	Menfro silt loam, 5 to 10 percent slopes, eroded	4,484	0.8
79C3	Menfro silty clay loam, 5 to 10 percent slopes, severely eroded	2,158	0.4
79D2	Menfro silt loam, 10 to 18 percent slopes, eroded	1,610	0.3
79D3	Menfro silty clay loam, 10 to 18 percent slopes, severely eroded	779	0.1
81A	Littleton silt loam, 0 to 2 percent slopes	474	*
86B	Osco silt loam, 2 to 5 percent slopes	4,027	0.7
88B	Sparta loamy sand, 1 to 6 percent slopes	372	*
90A	Bethalto silt loam, 0 to 2 percent slopes	2,322	0.4
90B	Bethalto silt loam, 2 to 5 percent slopes	5,431	1.0
111A	Rubio silt loam, 0 to 2 percent slopes	4,006	0.7
175F	Lamont sandy loam, 18 to 35 percent slopes	817	0.1
175G	Lamont sandy loam, 35 to 60 percent slopes	577	0.1
216B	Stookey silt loam, 2 to 5 percent slopes	5,975	1.1
216C2	Stookey silt loam, 5 to 10 percent slopes, eroded	4,906	0.9
216C3	Stookey silt loam, 5 to 10 percent slopes, severely eroded	170	*
216D2	Stookey silt loam, 10 to 18 percent slopes, eroded	2,041	0.4
216D3	Stookey silt loam, 10 to 18 percent slopes, severely eroded	148	*
257A	Clarksdale silt loam, 0 to 2 percent slopes	7,843	1.4
257B	Clarksdale silt loam, 2 to 5 percent slopes	9,676	1.7
264C2	El Dara silt loam, 5 to 10 percent slopes, eroded	1,571	0.3
264D2	El Dara silt loam, 10 to 18 percent slopes, eroded	1,826	0.3
264D3	El Dara sandy loam, 10 to 18 percent slopes, severely eroded	1,585	0.3
264E2	El Dara sandy loam, 18 to 25 percent slopes, eroded	2,279	0.4
264G	El Dara fine sandy loam, 35 to 60 percent slopes	31	*
267A	Caseyville silt loam, 0 to 2 percent slopes	511	*
267B	Caseyville silt loam, 2 to 5 percent slopes	1,081	0.2
271C2	Timula silt loam, 5 to 10 percent slopes, eroded	684	0.1
271D2	Timula silt loam, 10 to 18 percent slopes, eroded	880	0.2
279B	Rozetta silt loam, 2 to 5 percent slopes	13,699	2.5
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded	3,463	0.6
279C3	Rozetta silty clay loam, 5 to 10 percent slopes, severely eroded	788	0.1
283B	Downsouth silt loam, 2 to 5 percent slopes	9,202	1.7
283C2	Downsouth silt loam, 5 to 10 percent slopes, eroded	842	0.2
337A	Creal silt loam, 0 to 2 percent slopes	2,941	0.5
384A	Edwardsville silt loam, 0 to 2 percent slopes	4,656	0.8
384B	Edwardsville silt loam, 2 to 5 percent slopes	987	0.2
441B	Wakenda silt loam, 2 to 5 percent slopes	8,037	1.4
470B2	Keller silt loam, 2 to 5 percent slopes, eroded	2,903	0.5
470C	Keller silt loam, 5 to 10 percent slopes	2	*
470C2	Keller silt loam, 5 to 10 percent slopes, eroded	5,925	1.1
472C2	Baylis silt loam, 5 to 10 percent slopes, eroded	244	*
472D2	Baylis silt loam, 10 to 18 percent slopes, eroded	534	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
472E2	Baylis silt loam, 18 to 25 percent slopes, eroded	7	*
477B	Winfield silt loam, 2 to 5 percent slopes	20,688	3.7
477C2	Winfield silt loam, 5 to 10 percent slopes, eroded	7,176	1.3
477C3	Winfield silty clay loam, 5 to 10 percent slopes, severely eroded	1,229	0.2
515B2	Bunkum silt loam, 2 to 5 percent slopes, eroded	827	0.1
515C2	Bunkum silt loam, 5 to 10 percent slopes, eroded	13,170	2.4
515C3	Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded	9,861	1.8
515D2	Bunkum silt loam, 10 to 18 percent slopes, eroded	5,248	0.9
515D3	Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded	3,090	0.6
538B2	Emery silt loam, 2 to 5 percent slopes, eroded	2,718	0.5
538C2	Emery silt loam, 5 to 10 percent slopes, eroded	6,354	1.1
549D2	Marseilles silt loam, 10 to 18 percent slopes, eroded	754	0.1
549D3	Marseilles silty clay loam, 10 to 18 percent slopes, severely eroded	136	*
549F	Marseilles silt loam, 18 to 35 percent slopes	2,435	0.4
549G	Marseilles silt loam, 35 to 60 percent slopes	866	0.2
559F	Lindley loam, 18 to 35 percent slopes	7,334	1.3
559G	Lindley loam, 35 to 60 percent slopes	2,347	0.4
606F	Goss gravelly silt loam, 18 to 35 percent slopes	1,442	0.3
606G	Goss gravelly silt loam, 35 to 60 percent slopes	188	*
629C2	Crider silt loam, 5 to 10 percent slopes, eroded	118	*
629D2	Crider silt loam, 10 to 18 percent slopes, eroded	687	0.1
651C2	Keswick loam, 5 to 10 percent slopes, eroded	2,372	0.4
651C3	Keswick clay loam, 5 to 10 percent slopes, severely eroded	4,084	0.7
651D2	Keswick loam, 10 to 18 percent slopes, eroded	11,409	2.0
651D3	Keswick clay loam, 10 to 18 percent slopes, severely eroded	8,928	1.6
651E2	Keswick loam, 18 to 25 percent slopes, eroded	9,686	1.7
652C2	Passport silt loam, 5 to 10 percent slopes, eroded	103	*
652C3	Passport silty clay loam, 5 to 10 percent slopes, severely eroded	100	*
655C2	Ursa silt loam, moderately wet, 5 to 10 percent slopes, eroded	3,384	0.6
655C3	Ursa silty clay loam, moderately wet, 5 to 10 percent slopes, severely eroded	4,021	0.7
655D2	Ursa silt loam, moderately wet, 10 to 18 percent slopes, eroded	7,516	1.3
655D3	Ursa silty clay loam, moderately wet, 10 to 18 percent slopes, severely eroded	4,577	0.8
660C2	Coatsburg silt loam, 5 to 10 percent slopes, eroded	2,947	0.5
671A	Biggsville silt loam, 0 to 2 percent slopes	1,864	0.3
671B	Biggsville silt loam, 2 to 5 percent slopes	3,473	0.6
675B	Greenbush silt loam, 2 to 5 percent slopes	1,341	0.2
675C2	Greenbush silt loam, 5 to 10 percent slopes, eroded	16	*
678A	Mannon silt loam, 0 to 2 percent slopes	843	0.2
678B	Mannon silt loam, 2 to 5 percent slopes	3,332	0.6
785G	Lacrescent channery silt loam, 35 to 60 percent slopes	1,245	0.2
801B	Orthents, silty, undulating	1,415	0.3
816B	Stookey-Timula-Orthents complex, 1 to 7 percent slopes	2,177	0.4
816D	Stookey-Timula-Orthents complex, 7 to 15 percent slopes	399	*
829B	Biggsville-Mannon silt loams, 1 to 7 percent slopes	1,616	0.3
855A	Timewell and Ipava soils, 0 to 2 percent slopes	35,299	6.3
855B	Timewell and Ipava soils, 2 to 5 percent slopes	10,691	1.9
856F	Stookey and Timula soils, 18 to 35 percent slopes	3,521	0.6
856G	Stookey and Timula soils, 35 to 60 percent slopes	1,412	0.3
864	Pits, quarries	241	*
871G	Lenzburg silty clay loam, 20 to 60 percent slopes	211	*
1070L	Beaucoup silty clay loam, 0 to 2 percent slopes, undrained, occasionally flooded, long duration	1,315	0.2
3226A	Wirt silt loam, 0 to 2 percent slopes, frequently flooded	2,704	0.5
3331A	Haymond silt loam, 0 to 2 percent slopes, frequently flooded	4,959	0.9
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	22,025	4.0
3368L	Raveenwash silt loam, 0 to 2 percent slopes, frequently flooded, long duration	1,888	0.3
3396A	Vesser silt loam, 0 to 2 percent slopes, frequently flooded	728	0.1
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	6,779	1.2
3475A	Elsah gravelly loam, 0 to 2 percent slopes, frequently flooded	325	*
3634A	Blyton silt loam, 0 to 2 percent slopes, frequently flooded	4,683	0.8

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
3877L	Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration	11,156	2.0
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	12,231	2.2
8073A	Ross silt loam, 0 to 2 percent slopes, occasionally flooded	885	0.2
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	857	0.2
8092A	Sarpy sand, 0 to 2 percent slopes, occasionally flooded	205	*
8162A	Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded	1,185	0.2
8180A	Dupo silt loam, 0 to 2 percent slopes, occasionally flooded	1,479	0.3
8217A	Twomile silt loam, 0 to 2 percent slopes, occasionally flooded	2,734	0.5
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded	1,301	0.2
8333A	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded	3,967	0.7
8349B	Zumbro sandy loam, 1 to 6 percent slopes, occasionally flooded	393	*
8396A	Vesser silt loam, 0 to 2 percent slopes, occasionally flooded	3,163	0.6
8404A	Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded	9,292	1.7
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	1,684	0.3
8452A	Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded	4,426	0.8
8634A	Blyton silt loam, 0 to 2 percent slopes, occasionally flooded	1,061	0.2
W	Water	12,130	2.2
	Total	557,470	100.0

* Less than 0.1 percent.

United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Illinois Agricultural Experiment Station

Soil Survey of Adams County, Illinois

Part II

How To Use This Soil Survey

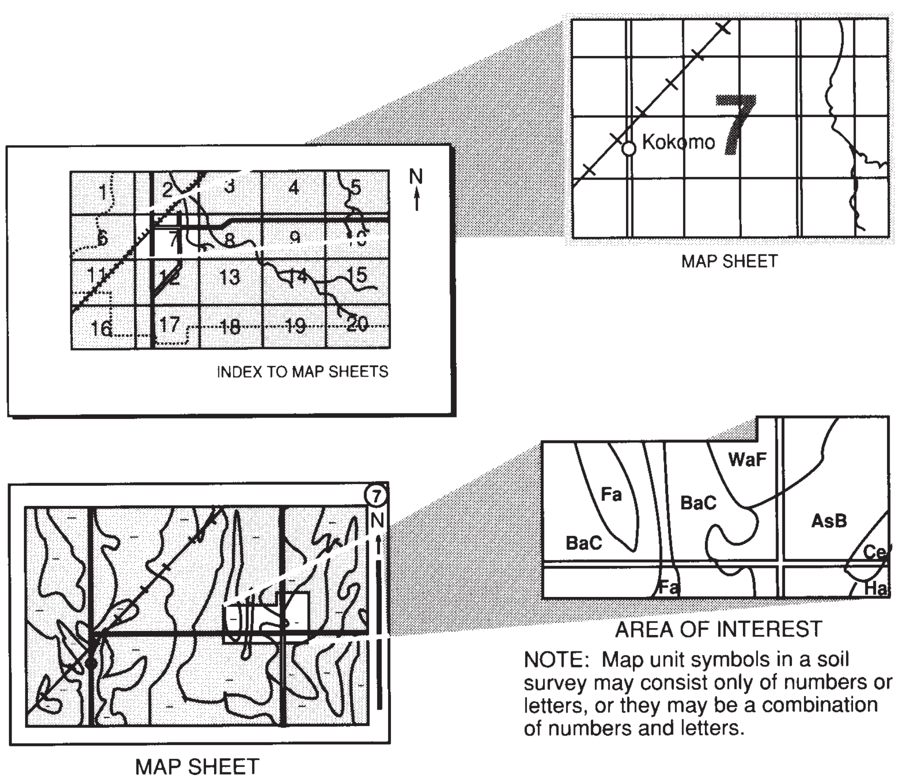
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents** in Part I, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** in Part II shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** in Part I and Part II for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1996. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1997. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Adams County Soil and Water Conservation District. Financial assistance was provided by the Adams County Board and the Illinois Department of Agriculture.

Cover: An area of cropland in Adams County. Creal soils are in the foreground, and Lacrescent soils are on the wooded side slopes.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Issued 2003

Detailed Soil Map Unit Legend

6B2—Fishhook silt loam, 2 to 5 percent slopes, eroded
6C2—Fishhook silt loam, 5 to 10 percent slopes, eroded
6C3—Fishhook silty clay loam, 5 to 10 percent slopes, severely eroded
6D2—Fishhook silt loam, 10 to 18 percent slopes, eroded
6D3—Fishhook silty clay loam, 10 to 18 percent slopes, severely eroded
7C2—Atlas silt loam, 5 to 10 percent slopes, eroded
7C3—Atlas silty clay loam, 5 to 10 percent slopes, severely eroded
8E2—Hickory loam, 18 to 25 percent slopes, eroded
8F—Hickory silt loam, 18 to 35 percent slopes
8G—Hickory silt loam, 35 to 60 percent slopes
16A—Rushville silt loam, 0 to 2 percent slopes
17A—Keomah silt loam, 0 to 2 percent slopes
17B—Keomah silt loam, 2 to 5 percent slopes
37A—Worthen silt loam, 0 to 2 percent slopes
37B—Worthen silt loam, 2 to 5 percent slopes
50A—Virden silty clay loam, 0 to 2 percent slopes
75A—Drury silt loam, 0 to 2 percent slopes
75B—Drury silt loam, 2 to 5 percent slopes
75C2—Drury silt loam, 5 to 10 percent slopes, eroded
79B—Menfro silt loam, 2 to 5 percent slopes
79C2—Menfro silt loam, 5 to 10 percent slopes, eroded
79C3—Menfro silty clay loam, 5 to 10 percent slopes, severely eroded
79D2—Menfro silt loam, 10 to 18 percent slopes, eroded
79D3—Menfro silty clay loam, 10 to 18 percent slopes, severely eroded
81A—Littleton silt loam, 0 to 2 percent slopes
86B—Osco silt loam, 2 to 5 percent slopes
88B—Sparta loamy sand, 1 to 6 percent slopes
90A—Bethalto silt loam, 0 to 2 percent slopes
90B—Bethalto silt loam, 2 to 5 percent slopes
111A—Rubio silt loam, 0 to 2 percent slopes
175F—Lamont sandy loam, 18 to 35 percent slopes
175G—Lamont sandy loam, 35 to 60 percent slopes
216B—Stookey silt loam, 2 to 5 percent slopes
216C2—Stookey silt loam, 5 to 10 percent slopes, eroded
216C3—Stookey silt loam, 5 to 10 percent slopes, severely eroded
216D2—Stookey silt loam, 10 to 18 percent slopes, eroded
216D3—Stookey silt loam, 10 to 18 percent slopes, severely eroded
257A—Clarksdale silt loam, 0 to 2 percent slopes
257B—Clarksdale silt loam, 2 to 5 percent slopes
264C2—El Dara silt loam, 5 to 10 percent slopes, eroded
264D2—El Dara silt loam, 10 to 18 percent slopes, eroded
264D3—El Dara sandy loam, 10 to 18 percent slopes, severely eroded
264E2—El Dara sandy loam, 18 to 25 percent slopes, eroded
264G—El Dara fine sandy loam, 35 to 60 percent slopes
267A—Caseyville silt loam, 0 to 2 percent slopes
267B—Caseyville silt loam, 2 to 5 percent slopes
271C2—Timula silt loam, 5 to 10 percent slopes, eroded
271D2—Timula silt loam, 10 to 18 percent slopes, eroded
279B—Rozetta silt loam, 2 to 5 percent slopes
279C2—Rozetta silt loam, 5 to 10 percent slopes, eroded
279C3—Rozetta silty clay loam, 5 to 10 percent slopes, severely eroded
283B—Downsouth silt loam, 2 to 5 percent slopes
283C2—Downsouth silt loam, 5 to 10 percent slopes, eroded
337A—Creal silt loam, 0 to 2 percent slopes
384A—Edwardsville silt loam, 0 to 2 percent slopes
384B—Edwardsville silt loam, 2 to 5 percent slopes
441B—Wakenda silt loam, 2 to 5 percent slopes
470B2—Keller silt loam, 2 to 5 percent slopes, eroded
470C—Keller silt loam, 5 to 10 percent slopes
470C2—Keller silt loam, 5 to 10 percent slopes, eroded
472C2—Baylis silt loam, 5 to 10 percent slopes, eroded
472D2—Baylis silt loam, 10 to 18 percent slopes, eroded

472E2—Baylis silt loam, 18 to 25 percent slopes, eroded
477B—Winfield silt loam, 2 to 5 percent slopes
477C2—Winfield silt loam, 5 to 10 percent slopes, eroded
477C3—Winfield silty clay loam, 5 to 10 percent slopes, severely eroded
515B2—Bunkum silt loam, 2 to 5 percent slopes, eroded
515C2—Bunkum silt loam, 5 to 10 percent slopes, eroded
515C3—Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded
515D2—Bunkum silt loam, 10 to 18 percent slopes, eroded
515D3—Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded
538B2—Emery silt loam, 2 to 5 percent slopes, eroded
538C2—Emery silt loam, 5 to 10 percent slopes, eroded
549D2—Marseilles silt loam, 10 to 18 percent slopes, eroded
549D3—Marseilles silty clay loam, 10 to 18 percent slopes, severely eroded
549F—Marseilles silt loam, 18 to 35 percent slopes
549G—Marseilles silt loam, 35 to 60 percent slopes
559F—Lindley loam, 18 to 35 percent slopes
559G—Lindley loam, 35 to 60 percent slopes
606F—Goss gravelly silt loam, 18 to 35 percent slopes
606G—Goss gravelly silt loam, 35 to 60 percent slopes
629C2—Crider silt loam, 5 to 10 percent slopes, eroded
629D2—Crider silt loam, 10 to 18 percent slopes, eroded
651C2—Keswick loam, 5 to 10 percent slopes, eroded
651C3—Keswick clay loam, 5 to 10 percent slopes, severely eroded
651D2—Keswick loam, 10 to 18 percent slopes, eroded
651D3—Keswick clay loam, 10 to 18 percent slopes, severely eroded
651E2—Keswick loam, 18 to 25 percent slopes, eroded
652C2—Passport silt loam, 5 to 10 percent slopes, eroded
652C3—Passport silty clay loam, 5 to 10 percent slopes, severely eroded
655C2—Ursa silt loam, moderately wet, 5 to 10 percent slopes, eroded
655C3—Ursa silty clay loam, moderately wet, 5 to 10 percent slopes, severely eroded
655D2—Ursa silt loam, moderately wet, 10 to 18 percent slopes, eroded
655D3—Ursa silty clay loam, moderately wet, 10 to 18 percent slopes, severely eroded
660C2—Coatsburg silt loam, 5 to 10 percent slopes, eroded
671A—Biggsville silt loam, 0 to 2 percent slopes
671B—Biggsville silt loam, 2 to 5 percent slopes
675B—Greenbush silt loam, 2 to 5 percent slopes
675C2—Greenbush silt loam, 5 to 10 percent slopes, eroded
678A—Mannon silt loam, 0 to 2 percent slopes
678B—Mannon silt loam, 2 to 5 percent slopes
785G—Lacrescent channery silt loam, 35 to 60 percent slopes
801B—Orthents, silty, undulating
816B—Stookey-Timula-Orthents complex, 1 to 7 percent slopes
816D—Stookey-Timula-Orthents complex, 7 to 15 percent slopes
829B—Biggsville-Mannon silt loams, 1 to 7 percent slopes
855A—Timewell and Ipava soils, 0 to 2 percent slopes
855B—Timewell and Ipava soils, 2 to 5 percent slopes
856F—Stookey and Timula soils, 18 to 35 percent slopes
856G—Stookey and Timula soils, 35 to 60 percent slopes
864—Pits, quarries
871G—Lenzburg silty clay loam, 20 to 60 percent slopes

1070L—Beaucoup silty clay loam, 0 to 2 percent slopes, undrained, occasionally flooded, long duration
3226A—Wirt silt loam, 0 to 2 percent slopes, frequently flooded
3331A—Haymond silt loam, 0 to 2 percent slopes, frequently flooded
3333A—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded
3368L—Raveenwash silt loam, 0 to 2 percent slopes, frequently flooded, long duration
3396A—Vesser silt loam, 0 to 2 percent slopes, frequently flooded
3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded
3475A—Elsah gravelly loam, 0 to 2 percent slopes, frequently flooded
3634A—Blyton silt loam, 0 to 2 percent slopes, frequently flooded
3877L—Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration
8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded
8073A—Ross silt loam, 0 to 2 percent slopes, occasionally flooded
8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8092A—Sarpy sand, 0 to 2 percent slopes, occasionally flooded
8162A—Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded
8180A—Dupo silt loam, 0 to 2 percent slopes, occasionally flooded
8217A—Twomile silt loam, 0 to 2 percent slopes, occasionally flooded
8284A—Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded
8333A—Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded
8349B—Zumbro sandy loam, 1 to 6 percent slopes, occasionally flooded
8396A—Vesser silt loam, 0 to 2 percent slopes, occasionally flooded
8404A—Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded
8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8452A—Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded
8634A—Blyton silt loam, 0 to 2 percent slopes, occasionally flooded

Soil Survey of
Adams County, Illinois

By Robert A. Tegeler, Natural Resources Conservation Service

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United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
the Illinois Agricultural Experiment Station

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops, pasture and hay, and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Interpretive ratings help engineers, planners, and others understand how soil properties influence important nonagricultural uses, such as building site development and construction materials. The ratings indicate the most restrictive soil features affecting the suitability of the soils for these uses.

Soils are rated in their natural state. No unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Even though soils may have limitations, it is important to remember that engineers and others can modify soil features or can design or adjust the plans for a structure to compensate for most of the limitations. Most of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs of site preparation and maintenance.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Minesoil descriptions and soil maps reflect conditions in the survey area at the time when the fieldwork was completed and may reflect active mining

and/or reclamation. More recent reclamation practices or changes in soil classification may change the mapping, classification, and interpretation of minesoils. At the time of publication, long-term crop yield information, which is typically used for yield estimates, was not available for minesoils. The users of this soil survey should contact the Illinois Department of Natural Resources, Office of Mines and Minerals, Land Reclamation Division, for current and site-specific information.

Climate information for the survey area is provided in tables 1, 2, and 3 at the back of Part II. The classification and extent of the soils in the survey area are shown in tables 4 and 5.

Agronomy

Mike Tryba, district conservationist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and for hay and pasture is suggested in this section. The system of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed for each soil, and prime farmland is described.

Planners of management systems for individual fields or farms should consider obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1992, approximately 464,834 acres in Adams County, or 85 percent of the total land area, consisted of farmland. Of this total, about 73,828 acres, or 16 percent, was used for permanent pasture and about 360,899 acres, or 78 percent, was used for cultivated crops, mainly soybeans, corn, wheat, and grain sorghum (U.S. Department of Commerce, 1994). Approximately 43 percent of the cropland, or 152,000 acres, is highly erodible land (HEL) (USDA, 1985).

The potential of the soils in Adams County for sustained production of food is good if the soils are managed properly. Extending the latest crop production technology to all of the cropland in the county could increase food production. This soil survey can greatly facilitate the application of such technology.

The main field crops grown in the county are corn and soybeans. Small grain and forage crops also are grown. Forage crops could be grown more extensively on nearly all of the cropland for effective erosion control. Specialty crops, such as sweet corn, sod, and ornamental plants, are grown in some areas. Nursery stock is grown in a few areas. In addition, the county has several orchards.

Cropland Management Considerations

The management concerns affecting the use of the detailed soil map units in the survey area for crops are shown in table 6.

The paragraphs that follow describe the major concerns in managing the cropland in the survey area. These concerns are water erosion, wetness, poor tilth, crusting, and flooding.

Water erosion can occur when the soil surface is not protected against the impact of raindrops. This erosion reduces the stability of soil aggregates and thus reduces the rate of water infiltration and increases the runoff rate. Soils that have long or steep slopes are the most susceptible to water erosion. Sheet and rill erosion removes the surface soil, which typically has the highest rate of biological activity and the highest content of organic matter. The productivity of the soil is reduced as the content of organic matter and the level of fertility are lowered. Poor tilth and surface crusting occur as the subsoil is incorporated through tillage into the plow layer. The subsoil generally has a higher content of clay than the surface layer. Excessive runoff resulting from erosion can reduce the quality of surface water through sedimentation and contamination from pesticides.

Erosion can be controlled by using a system of conservation tillage that leaves a protective cover of crop residue on the surface after planting or by including grasses and legumes in a rotational cropping system. In areas where slopes are long and uniform, contour farming and/or terraces in combination with a conservation tillage system can help to control erosion (fig. 5).

Wetness occurs in areas where the seasonal high water table is at or near the surface. Subsurface tile drains can lower the water table if suitable outlets are available. In areas of soils that have restricted permeability and a high content of clay, however, subsurface drainage may not be practical. In areas of these soils, surface ditches can be used to reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Poor tilth can occur if part of the subsoil is incorporated into the plow layer as a result of erosion. This process reduces the content of organic matter in the surface soil and increases the content of clay. In areas where this process has occurred, intensive rainfall can cause the formation of a crust on the

Figure 5.—Terraces have been installed in this area in Adams County. Terraces help to control erosion, especially in combination with other conservation practices.

surface. Poor tilth can also occur in poorly drained soils that have a high content of clay, regardless of the content of organic matter, and in areas where the soils have been excessively tilled.

Poor tilth reduces the rate of water infiltration and increases the runoff rate and the hazard of erosion in the more sloping areas. Soils that have poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because these soils can be tilled only within a narrow range in moisture content, preparing a seedbed can be difficult.

Returning crop residue to the soil and regularly adding organic material can improve soil tilth. Minimizing tillage and tilling only under the proper soil moisture conditions can also improve tilth.

Crusting occurs when flowing water or raindrops break down soil structural units, moving clay downward through the profile and leaving a concentration of sand and silt particles at the soil surface. Crusting can reduce the rate of water infiltration, increase the runoff rate, restrict seedling emergence, and reduce the diffusion of oxygen to seedlings.

Crusting can be minimized by increasing the stability of soil aggregates by adding organic material to the surface layer and by maintaining a cover of plants or crop residue on the surface.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Levees or diversions reduce the extent of crop damage caused by floodwater. Surface drainage ditches help to remove floodwater in areas where suitable outlets are

available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting crop varieties that are adapted to a shorter growing season and wetter conditions can also help to prevent crop damage.

Additional limitations and hazards are as follows:

Rock fragments can be a problem in soils that have a high content of gravel, cobbles, or stones in the surface layer. This limitation causes rapid wear of tillage equipment and can affect seedbed preparation, planting, and plant emergence. It cannot be easily overcome.

Ponding is a concern in areas where the seasonal high water table is above the surface. Land grading helps to control ponding. Surface ditches and surface inlet tile also can be used to remove excess water if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Wind erosion occurs when large areas of the soil surface that are smooth and unprotected are exposed to wind velocities sufficient to lift individual soil particles. Soils that have a sandy surface layer, have a low content of organic matter, are dry, or have poor aggregate stability are the most susceptible to wind erosion.

Wind erosion can be controlled by applying a system of conservation tillage that leaves crop residue on the surface after planting, by using tillage systems that leave the surface rough, by establishing field windbreaks, and by regularly adding organic material to the soil.

Low available water capacity can occur in soils that have a high content of sand, a low content of clay, and a low content of organic matter. Reducing the evaporation and runoff rates and increasing the rate of water infiltration can conserve soil moisture.

Measures that conserve soil moisture include applying conservation tillage and conservation cropping systems, establishing field windbreaks, and leaving crop residue on the surface.

Excessive permeability can occur in soils that have a high content of sand and thus have many large pores. The capacity of these soils to retain moisture for plant use is limited. The deep leaching of nutrients and pesticides that can result can increase the risk of ground-water pollution.

Irrigation can be used to supply the moisture needed for crops. Frequent applications of a small amount of fertilizer are needed. A single application of a large amount of fertilizer can result in excessive loss of plant nutrients through leaching.

The criteria used in determining the limitations or hazards affecting the use of the soils for crops are described in the following paragraphs.

Crusting.—The content of organic matter in the surface layer is less than or equal to 2.5 percent, and the content of clay is more than 20 percent.

Rock fragments.—The content of gravel, cobbles, or stones in the surface layer is more than 15 percent.

Poor tilth.—The content of clay in the surface layer is greater than or equal to 27 percent.

Wetness.—The seasonal high water table is less than 1.5 feet below the surface.

Ponding.—The upper limit of the ponding depth is more than 0 inches.

Flooding.—The component of the map unit is occasionally or frequently flooded.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Water erosion.—The K factor multiplied by the slope is greater than or equal to 0.8, and the slope is greater than or equal to 3 percent.

Low available water capacity.—In the upper 40 inches, the weighted average of the available water capacity is less than or equal to 0.10 inch per inch.

Excessive permeability.—The lower limit of the permeability rate is greater than or equal to 6.0 inches per hour within the soil profile.

Pasture Management Considerations

The management concerns affecting the use of the detailed soil map units in the survey area for pasture are shown in table 7.

The paragraphs that follow describe the major concerns in managing the cropland in the survey area. These concerns are wetness, water erosion, frost heave, equipment limitation, and low pH.

Wetness occurs in areas where the seasonal high water table is at or near the surface. Subsurface tile drains can lower the water table if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting forage and hay varieties that are adapted to wet conditions can improve forage production. Restricting use during wet periods helps to keep the pasture in good condition.

Water erosion can occur in overgrazed areas or during pasture establishment and renovation if the surface is not protected (fig. 6). The impact of raindrops in these areas can cause poor tilth, which reduces the rate of water infiltration and increases the runoff rate. Soils that have long or steep slopes are

Figure 6.—Maintaining a cover of forage crops helps to control erosion in this area of Menfro soils.

also susceptible to water erosion. Deferring grazing helps to prevent overgrazing and thus also helps to minimize surface compaction and excessive runoff and erosion. Tilling on the contour, using a no-till system of seeding when a seedbed is prepared or the pasture is renovated, and selecting adapted forage and hay varieties can also help to control erosion.

Frost heave occurs when ice lenses or bands develop in the soil and drive an ice wedge between two layers of soil near the surface layer. The ice wedges heave the overlying soil layer upward, snapping plant roots. Soils that have a low content of sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties can minimize the effects of frost heave. Timely deferment of grazing helps to maintain a cover of vegetation on the surface. The vegetative cover insulates the soil and thus helps to prevent frost heave.

Equipment limitation is a concern in areas where the slope is more than 10 percent. This limitation can cause rapid wear of equipment. It can also affect fertilization, harvest, pasture renovation, and seedbed preparation. It cannot be easily overcome.

Low pH is a concern in soils that have a pH of less than 5.5. It can hinder solubility and availability of nutrients for plant growth. Selecting adapted forage and hay varieties and applying lime according to the results of soil tests can help to overcome this limitation.

Additional limitations and hazards are as follows:

Rock fragments can be a problem in soils that have a high content of gravel, cobbles, or stones in the surface layer. This limitation causes rapid wear of

tillage equipment and can affect pasture renovation, seedbed preparation, planting, and seedling emergence. It cannot be easily overcome.

Ponding is a concern in areas where the seasonal high water table is above the surface. Land grading helps to control ponding. Surface ditches and surface inlet tile also can be used to remove excess water if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting forage and hay varieties that are adapted to wet conditions can improve forage production. Restricting use during wet periods helps to keep the pasture in good condition.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Surface drainage ditches can be used to remove floodwater if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting forage and hay varieties that are adapted to a shorter growing season and wet conditions can reduce the extent of flood damage. Restricting use during wet periods helps to keep the pasture in good condition.

Wind erosion can occur during pasture establishment or renovation when large areas of the soil surface that are smooth and unprotected are exposed to wind velocities sufficient to lift individual soil particles. Soils that have a sandy surface layer, have a low content of organic matter, are dry, or have poor aggregate stability are the most susceptible to wind erosion. Planting drought-tolerant grasses and legumes, using a no-till system of seeding when a seedbed is prepared, and applying a system of deferred grazing can maintain a cover of vegetation and help to control wind erosion. Field windbreaks can also be used to reduce the hazard of wind erosion.

Low available water capacity can occur in soils that have a high content of sand, a low content of clay, and a low content of organic matter. Reducing the evaporation and runoff rates and increasing the rate of water infiltration can conserve soil moisture. Establishing field windbreaks, selecting drought-tolerant grasses and legumes, using a no-till system of seeding when a seedbed is prepared, and applying a system of deferred grazing help to maintain a cover of vegetation and thus conserve soil moisture.

Low fertility in soils can be a result of a low content of organic matter and a low cation-exchange capacity. The capacity of the soil to retain nutrients for plant use is limited. Frequent applications of small amounts of fertilizer help to prevent the excessive loss of plant nutrients through leaching. Using legumes as part of the seeding mixture can provide nitrogen to grass varieties. Timely deferment of grazing helps to maintain a cover of vegetation on the surface and thus maintains the content of organic matter, which is a source of nutrients in the soil.

The criteria used in determining the limitations or hazards affecting the use of the soils for pasture are described in the following paragraphs.

Rock fragments.—The content of gravel, cobbles, or stones in the surface layer is more than 15 percent.

Wetness.—The seasonal high water table is less than 1.5 feet below the surface.

Ponding.—The upper limit of the ponding depth is more than 0 inches.

Flooding.—The component of the map unit is occasionally or frequently flooded.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Water erosion.—The K factor multiplied by the slope is greater than or equal to 0.8, and the slope is greater than or equal to 3 percent.

Low available water capacity.—In the upper 40 inches, the weighted average of the available water capacity is less than or equal to 0.10 inch per inch.

Low fertility.—The average content of organic matter in the surface layer is less than 1 percent, or the cation-exchange capacity (CEC) is less than or equal to 7.

Frost heave.—The potential for frost action is moderate or high.

Equipment limitation.—The slope is greater than 10 percent.

Low pH.—The pH in the surface layer is less than or equal to 5.5.

Yield Estimates

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 8. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

Cropland Interpretations

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 8 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Pasture and Hayland Interpretations

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush management is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in table 8.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly

because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of map units in this survey area is given in table 8.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 9. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described in the map unit descriptions in Part I of this survey.

Erosion Factors

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices. The erosion factors are shown in table 19.

Soil Erodibility (K) Factor

The soil erodibility (K) factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the Revised Universal Soil Loss Equation. It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Soil-Loss Tolerance (T) Factor

The soil-loss tolerance (T) factor is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullying, and the value of nutrients lost through erosion.

Wind Erodibility Groups

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index (I) factor is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter. The wind erodibility groups and wind erodibility index factors are listed in table 19.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 10 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Forestland

Bob Churd, forester, Illinois Department of Natural Resources, helped prepare this section.

Approximately 88,700 acres in Adams County, or 11 percent of the total acreage, is forested (Iverson and others, 1989). The upland forested tracts in the county are primarily small, private holdings of 20 to 80 acres. Only 3,090 acres, or 5 percent of the forestland in the county, is under management by a qualified forester (Iverson and others, 1989).

Larger continuous tracts of timber occur along the bluffs of the Mississippi River Valley. On the flood plains, forestland is restricted to long, narrow bands bordering streams and rivers. Tree species and growth rates vary, depending on soil properties, site characteristics, and past management.

Soil properties that affect the growth of trees include reaction (pH), fertility, drainage, texture, structure, and depth. The soil also serves as a reservoir for moisture, provides an anchor for roots, and supplies essential plant nutrients. Soils that do not have extremes of these properties and have an effective rooting depth of more than 40 inches allow for the best growth for wood production.

Site characteristics that affect tree growth include aspect and topographic position. These site characteristics influence the amount of available sunlight, air drainage, soil temperature, soil moisture, and relative humidity. Typically, north and east aspects and the lower slope positions, which are cooler and have better moisture conditions than other sites, are the best upland sites for tree growth. The most productive bottom-land sites are generally areas of deep, moderately well drained soils that are subject to only occasional flooding.

Management activities can influence forestland productivity and should be aimed at eliminating factors causing tree stress. Generally, these activities include thinning overstocked young stands; harvesting old, mature trees; eliminating destructive fire; and preventing grazing. Fire and grazing have very negative impacts on forest growth and quality. Although frequent forest fires are no longer a problem in the county, about 50 percent of the forestland is still subject to grazing. Grazing destroys the leaf layer on the surface, compacts the soil, and destroys or damages tree seedlings. Forestland sites that are protected from livestock and fire have the highest potential for optimum timber production and tree growth.

Goss, Hickory, Lindley, Menfro, Stookey, Timula, and Winfield soils, which are generally in the central, southeastern, and western parts of the county, have the largest acreage of upland forests. Typical species are white oak, northern red oak, black oak, and sugar maple. Undisturbed forested areas of Hickory, Menfro, Stookey, and Timula soils are very productive.

Along the major watercourses, Beaucoup, Titus, and Wakeland soils support bottom-land hardwoods adapted to saturated or flooded soil conditions. Most of these sites have been cleared for crop production. The remaining wooded areas on the bottom land along the Mississippi River typically support silver maple, swamp white oak, sycamore, and cottonwood. Blake and Slacwater soils have the largest areas of forestland along the Mississippi River. Bur oak, shellbark hickory, green ash, pin oak, and walnut are common on the bottom land along the smaller streams and on the higher terraces of the major streams. Haymond and Wakeland soils have the largest areas of forestland on the flood plains along small streams. These sites have a high potential for excellent forest growth.

Special use tree plantings, such as Christmas trees, nut trees, and fuelwood trees, can be very successful if adapted species are used. Christmas tree plantings can be established on any soil that is not poorly drained or very poorly drained. The best suited Christmas tree species for the soils in Adams County are Scotch pine, Austrian pine, white pine, and Douglas-fir. Nut trees, such as black walnut, are best suited to deep, medium textured, moderately well drained and well drained soils on uplands, such as Winfield and Menfro soils, and to deep, medium textured, somewhat poorly drained soils on bottom land, such as Wakeland soils. Other soils are also suitable for nut trees but may be less productive. Tree plantations for fuelwood can be established in Adams

County if fast-growing trees are used. The species most suitable for this purpose are green ash, black locust, sycamore, and silver maple.

Table 11 can help woodland owners or forest managers plan the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for an indicator tree species. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce in a pure stand under natural conditions. The number 1 indicates low potential productivity; 2 or 3, moderate; 4 or 5, moderately high; 6 to 8, high; 9 to 11, very high; and 12 to 39, extremely high. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *R* indicates steep slopes; *X*, stoniness or rockiness; *W*, excess water in or on the soil; *T*, toxic substances in the soil; *D*, restricted rooting depth; *C*, clay in the upper part of the soil; *S*, sandy texture; *F*, a high content of rock fragments in the soil; *L*, low strength; and *N*, snowpack. The letter *A* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, X, W, T, D, C, S, F, L, and N.

In table 11, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed also are subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a seasonal high water table and the depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development,

but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and as a *volume* number. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *volume*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil and is the one that determines the ordination class.

Trees to manage are those that are suitable for commercial wood production.

Recreation

Recreational facilities in Adams County include swimming pools and other facilities for water sports, golf courses, ball fields, playgrounds, campgrounds, picnic areas, nature areas, trails, fairgrounds, historic sites, areas for hunting and fishing, and areas for viewing wildlife. The potential for further recreational development is very favorable throughout the county.

Bear Creek, Canton Chute, and Triangle Lake recreational areas, Mark Twain Wildlife Refuge areas, and Siloam Springs State Park make up about 5,960 acres of land that is open to the public. They provide opportunities for primitive camping, hiking, hunting, wildlife viewing, and other forms of outdoor recreation. Several Federal, State, and municipal access sites on the Mississippi River provide boat-launching facilities. City parks at Camp Point, Payson, and Quincy and the federally owned islands in the Mississippi River also are used for recreation.

Several private and semiprivate commercial recreational enterprises are in the county (Illinois Department of Conservation, 1974). These include hunting clubs, fishing areas, lakes, country clubs, boat rentals, historic sites, and campgrounds.

The soils of the survey area are rated in table 12 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 12, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these.

The information in table 12 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 15 and interpretations for dwellings without basements and for local roads and streets in table 14.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty

when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Brad Poulter, district biologist, Illinois Department of Natural Resources, helped prepare this section.

Adams County is divided into three natural divisions of Illinois. These divisions are the Western Forest-Prairie, the Upper Mississippi River and Illinois River Bottomlands, and the Middle Mississippi Border Divisions (Illinois Nature Preserves Commission, 1973). Because of the diversity of different cover types, these regions are some of the richest game areas in the state. They provide a variety and profusion of edge growth that makes excellent wildlife habitat. The problems affecting the wildlife resources are the conversion of woodland to grassland and cropland and the loss of hedgerows and brushy waterways. In addition, fall tillage of cropland reduces the amount of food available to wildlife.

More than 300 fish and wildlife species have been recorded in Adams County. Some, like the Mississippi kite, are only very rarely found in the county, but many others migrate through the area in spring and fall. Typical nongame species include red-winged blackbird, house wren, red-tailed hawk, eastern garter snake, and deer mouse. The most common game species include bobwhite quail, white-tailed deer, eastern wild turkey, fox squirrel, gray squirrel, eastern cottontail rabbit, and raccoon (Illinois Nature Preserves Commission, 1973).

The furbearer population is good. Trapping activity varies with the demand for furs. Raccoon, muskrat, opossum, coyote, red fox, beaver, mink, and gray fox are the principal species trapped.

The federally endangered bald eagle, fat pocketbook pearly mussel, Indiana bat, gray bat, and least tern have been recorded in the county. Thirteen additional members of the state's rare and endangered species list have also been found in the survey area, including osprey, river otter, Illinois mud turtle, Illinois chorus frog, great egret, least weasel, Indiana bat, and black-crowned night heron.

Areas of Timewell, Ipava, and Virden soils on uplands and Beaucoup, Titus, and Wakeland soils on cultivated flood plains provide most of the openland wildlife habitat in the county. El Dara, Hickory, Keomah, Keswick, Lindley, Menfro, Rozetta, Ursa, and Winfield soils also have some acreage of hayland and grassland. Scattered small blocks of timber, waterways, hedgerows, fence rows, and other areas that provide woody or brushy cover are common throughout areas of these soils. Such “hard cover” areas provide an important habitat component that is rapidly disappearing in many areas of the county that are used intensively for agricultural production.

Bobwhite quail is one of the most popular game species in the county. The population of this species is low in the heavily timbered areas and is only fair in the openland areas in the county, except for the areas that provide the best habitat. The rabbit population is good.

El Dara, Hickory, Keswick, Lindley, Menfro, Ursa, and Winfield soils provide most of the woodland wildlife habitat in the county. Approximately 11 percent of the county has some form of wooded habitat, which includes areas of the smaller brushy plants.

The county has an excellent deer population. Interest in deer hunting is very high among county residents and among nonresident archery hunters. The turkey population also is very good. Hunting interest in this game bird is high. The squirrel population is good, but this species is subject to only light hunting pressure.

Nearly all of the remaining wetland wildlife habitat in the county is in areas of Beaucoup, Blake, Slacwater, Titus, and Wakeland soils along the Mississippi River and Bear Creek. The Bear Creek and Mark Twain Wildlife Refuge areas attract waterfowl during the spring and fall. The Department of Natural Resources has stocked river otters, and the numbers of these interesting mammals should increase along the county's rivers and streams.

More than 70 species of fish inhabit the waters of Adams County. Prime opportunities for fishing are available on rivers, streams, lakes, and farm ponds. There are about 200 miles of perennial streams in the county. The Mississippi River borders the county for 40 miles (Illinois Nature Preserves Commission, 1973).

Major fishing areas are the Mississippi River and

Bear, Mill, and McKee Creeks. Bass, white bass, crappie, sauger, walleye, sunfish, drum, carp, bluegill, and catfish inhabit these watercourses.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 13, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, bromegrass, timothy, orchardgrass, clover, alfalfa, trefoil, reed canarygrass, and crownvetch.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, blackberry, ragweed, and wheatgrass.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, maple, green ash, and willow. Examples of fruit-producing shrubs that are suitable for planting on soils that have good potential for these plants are hawthorn, American plum, redosier dogwood, chokeberry, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, yew, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, pickerelweed, and cattail.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland,

pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include quail, pheasant, meadowlark, field sparrow, killdeer, cottontail rabbit, fox, and coyote.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodpeckers, tree squirrels, porcupine, raccoon, deer, short-tailed shrew, finelined skink, and nuthatches.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, muskrat, otter, mink, and beaver.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

This survey can be used to locate probable areas of hydric soils.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998).

16A Rushville silt loam, 0 to 2 percent slopes
50A Virden silty clay loam, 0 to 2 percent slopes
111A Rubio silt loam, 0 to 2 percent slopes
660C2 Coatsburg silt loam, 5 to 10 percent slopes, eroded
1070L Beaucoup silty clay loam, 0 to 2 percent slopes, undrained, occasionally flooded, long duration
3368L Raveenwash silt loam, 0 to 2 percent slopes, frequently flooded, long duration
3396A Vesser silt loam, 0 to 2 percent slopes, frequently flooded
3877L Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration
8070A Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded
8162A Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded

8217A Twomile silt loam, 0 to 2 percent slopes, occasionally flooded
8396A Vesser silt loam, 0 to 2 percent slopes, occasionally flooded
8404A Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 14 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, or other purposes. The ratings are based on soil properties, site features, and

observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 15 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the

solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, rock fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 16 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration.

The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 16, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions in Part I of this survey. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 17 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other

permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to verify map unit composition and the accuracy of the map unit delineations on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

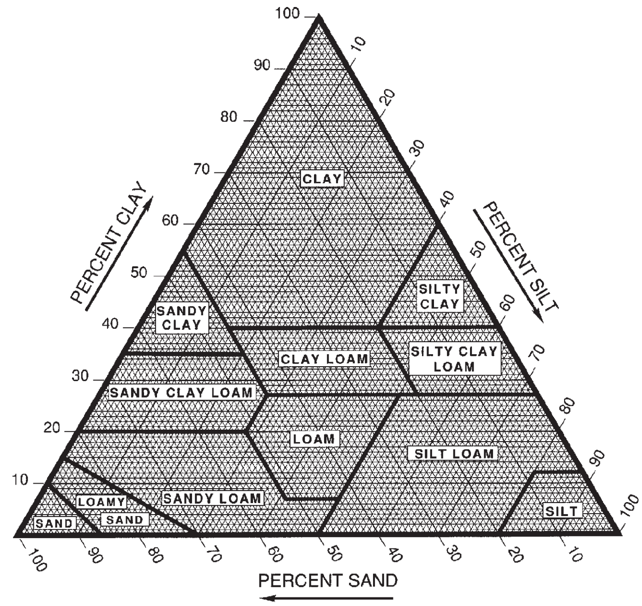

Figure 7.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

Engineering Index Properties

Table 18 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 7). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Tables 19 and 20 show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

In table 19, *clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after the soil is dried at 105 degrees C. In table 19, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect retention of water and depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation

systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 19, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 19 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

In table 20, *cation-exchange capacity* is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Effective cation-exchange capacity refers to the

sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

High water table refers to a saturated zone in the soil. Table 21 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

The table also shows the kind of water table—that is, perched or apparent. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means

that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 22 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. For example, the capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management

increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clayey soil. Silty clay, sandy clay, or clay.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clearcut. A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

Codominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Commercial forest. Forestland capable of producing 20 cubic feet or more per acre per year at the age of culmination of the mean annual increment.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and

management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Consolidated shale. Shale that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry and are not easily crushed.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and

includes everything from the litter on the surface to underlying pure humus.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition

and development because of given physical and biological factors by which it may be differentiated from other stands.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciated uplands. Land areas that were previously covered by continental or alpine glaciers and that are at a higher elevation than the flood plain.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum. A mineral consisting of hydrous calcium sulfate.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material.

Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or

saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mean annual increment (MAI). The average annual increase in volume of a tree during the entire life of the tree.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Overstory. The trees in a forest that form the upper crown cover.

Oxbow. The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly

the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regeneration. The new growth of a natural plant community, developing from seed.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Riser. The relatively short, steeply sloping area below a terrace tread that grades to a lower terrace tread or base level.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to

that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Trafficability. The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

Tread. The relatively flat terrace surface that was cut or built by stream or wave action.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Quincy, Illinois)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	32.1	15.6	23.8	63	-15	13	1.37	0.38	2.16	2	6.1
February---	36.9	20.1	28.5	66	-10	27	1.47	.71	2.13	3	6.4
March------	49.5	31.5	40.5	81	3	147	3.19	1.73	4.48	5	3.3
April------	63.2	43.0	53.1	87	23	404	3.72	2.08	5.18	6	.6
May--------	73.2	52.9	63.0	90	35	713	4.63	2.89	6.20	7	.0
June-------	82.4	62.0	72.2	96	46	967	3.83	2.01	5.43	5	.0
July-------	86.8	66.6	76.7	100	51	1,137	4.55	1.92	6.79	6	.0
August-----	84.0	63.8	73.9	99	48	1,051	3.67	1.73	5.35	5	.0
September--	77.3	56.1	66.7	94	37	801	4.69	2.18	6.85	6	.0
October----	65.8	44.7	55.2	87	26	476	3.36	1.47	4.98	5	.0
November---	51.0	33.7	42.3	76	9	163	2.85	1.19	4.26	5	1.8
December---	36.5	21.4	28.9	66	-9	31	2.35	.94	3.53	4	4.9
Yearly:											
Average---	61.6	42.6	52.1	---	---	---	---	---	---	---	---
Extreme---	---	---	---	101	-17	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,931	39.69	30.73	48.11	59	23.2

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Quincy, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 7	Apr. 21	Apr. 28
2 years in 10 later than--	Apr. 2	Apr. 15	Apr. 23
5 years in 10 later than--	Mar. 25	Apr. 5	Apr. 13
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 28	Oct. 14	Oct. 3
2 years in 10 earlier than--	Nov. 2	Oct. 20	Oct. 9
5 years in 10 earlier than--	Nov. 10	Nov. 1	Oct. 20

Table 3.--Growing Season

(Recorded in the period 1961-90 at Quincy, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	212	187	167
8 years in 10	218	195	175
5 years in 10	230	209	189
2 years in 10	241	223	204
1 year in 10	247	230	211

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Atlas	Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs
Baylis	Fine-silty, mixed, superactive, mesic Typic Paleudalfs
Beaucoup	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Bethalto	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Biggsville	Fine-silty, mixed, superactive, mesic Typic Hapludolls
Blake	Fine-silty, mixed, superactive, calcareous, mesic Aquic Udifluvents
Blyton	Coarse-silty, mixed, superactive, nonacid, mesic Oxyaquic Udifluvents
Bunkum	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
*Caseyville	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Clarksdale	Fine, smectitic, mesic Udollic Endoaqualfs
Coatsburg	Fine, smectitic, mesic Vertic Argiaquolls
Creal	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Crider	Fine-silty, mixed, active, mesic Typic Paleudalfs
Downsouth	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Drury	Fine-silty, mixed, superactive, mesic Dystric Eutrudepts
Dupo	Coarse-silty over clayey, mixed over smectitic, superactive, nonacid, mesic Aquic Udifluvents
Edwardsville	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
El Dara	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Elsah	Loamy-skeletal, mixed, superactive, nonacid, mesic Typic Udifluvents
Emery	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Fishhook	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Gorham	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Goss	Clayey-skeletal, mixed, active, mesic Typic Paleudalfs
Greenbush	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Haymond	Coarse-silty, mixed, superactive, mesic Fluventic Dystrudepts
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Huntsville	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Ipava	Fine, smectitic, mesic Aquic Argiudolls
*Keller	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
*Keswick	Fine, smectitic, mesic Aquertic Chromic Hapludalfs
Lacrescent	Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls
Lamont	Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
*Lenzburg	Fine-loamy, mixed, active, calcareous, mesic Alfic Udarents
Lindley	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Littleton	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Mannon	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Marseilles	Fine-silty, mixed, active, mesic Typic Hapludalfs
Menfro	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Orthents	Fine-silty, mixed, superactive, nonacid, mesic Typic Udorthents
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Passport	Fine-loamy, mixed, superactive, mesic Aquic Hapludalfs
Raveenwash	Coarse-loamy, mixed, superactive, calcareous, mesic Aquic Udifluvents
Riley	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Fluvaquentic Hapludolls
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Rubio	Fine, smectitic, mesic Vertic Albaqualfs
Rushville	Fine, smectitic, mesic Typic Albaqualfs
Sarpy	Mixed, mesic Typic Udipsamments
Slacwater	Fine-silty, mixed, superactive, calcareous, mesic Mollic Fluvaquents
Sparta	Sandy, mixed, mesic Entic Hapludolls
Stookey	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Tice	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Timewell	Fine, smectitic, mesic Aquic Argiudolls
Timula	Coarse-silty, mixed, superactive, mesic Typic Eutrudepts
Titus	Fine, smectitic, mesic Vertic Endoaquolls
Twomile	Fine-silty, mixed, active, mesic Typic Albaqualfs
Ursa	Fine, smectitic, mesic Chromic Vertic Hapludalfs

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Vesser	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Virden	Fine, smectitic, mesic Vertic Argiaquolls
Wakeland	Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents
Wakenda	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Winfield	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
*Wirt	Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Worthen	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Zumbro	Sandy, mixed, mesic Entic Hapludolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
6B2	Fishhook silt loam, 2 to 5 percent slopes, eroded	1,504	0.3
6C2	Fishhook silt loam, 5 to 10 percent slopes, eroded	4,668	0.8
6C3	Fishhook silty clay loam, 5 to 10 percent slopes, severely eroded	3,499	0.6
6D2	Fishhook silt loam, 10 to 18 percent slopes, eroded	879	0.2
6D3	Fishhook silty clay loam, 10 to 18 percent slopes, severely eroded	642	0.1
7C2	Atlas silt loam, 5 to 10 percent slopes, eroded	606	0.1
7C3	Atlas silty clay loam, 5 to 10 percent slopes, severely eroded	2,061	0.4
8E2	Hickory loam, 18 to 25 percent slopes, eroded	7,286	1.3
8F	Hickory silt loam, 18 to 35 percent slopes	15,624	2.8
8G	Hickory silt loam, 35 to 60 percent slopes	777	0.1
16A	Rushville silt loam, 0 to 2 percent slopes	1,168	0.2
17A	Keomah silt loam, 0 to 2 percent slopes	10,450	1.9
17B	Keomah silt loam, 2 to 5 percent slopes	27,013	4.8
37A	Worthen silt loam, 0 to 2 percent slopes	942	0.2
37B	Worthen silt loam, 2 to 5 percent slopes	347	*
50A	Virden silty clay loam, 0 to 2 percent slopes	17,407	3.1
75A	Drury silt loam, 0 to 2 percent slopes	200	*
75B	Drury silt loam, 2 to 5 percent slopes	1,966	0.4
75C2	Drury silt loam, 5 to 10 percent slopes, eroded	1,034	0.2
79B	Menfro silt loam, 2 to 5 percent slopes	8,457	1.5
79C2	Menfro silt loam, 5 to 10 percent slopes, eroded	4,484	0.8
79C3	Menfro silty clay loam, 5 to 10 percent slopes, severely eroded	2,158	0.4
79D2	Menfro silt loam, 10 to 18 percent slopes, eroded	1,610	0.3
79D3	Menfro silty clay loam, 10 to 18 percent slopes, severely eroded	779	0.1
81A	Littleton silt loam, 0 to 2 percent slopes	474	*
86B	Osco silt loam, 2 to 5 percent slopes	4,027	0.7
88B	Sparta loamy sand, 1 to 6 percent slopes	372	*
90A	Bethalto silt loam, 0 to 2 percent slopes	2,322	0.4
90B	Bethalto silt loam, 2 to 5 percent slopes	5,431	1.0
111A	Rubio silt loam, 0 to 2 percent slopes	4,006	0.7
175F	Lamont sandy loam, 18 to 35 percent slopes	817	0.1
175G	Lamont sandy loam, 35 to 60 percent slopes	577	0.1
216B	Stookey silt loam, 2 to 5 percent slopes	5,975	1.1
216C2	Stookey silt loam, 5 to 10 percent slopes, eroded	4,906	0.9
216C3	Stookey silt loam, 5 to 10 percent slopes, severely eroded	170	*
216D2	Stookey silt loam, 10 to 18 percent slopes, eroded	2,041	0.4
216D3	Stookey silt loam, 10 to 18 percent slopes, severely eroded	148	*
257A	Clarksdale silt loam, 0 to 2 percent slopes	7,843	1.4
257B	Clarksdale silt loam, 2 to 5 percent slopes	9,676	1.7
264C2	El Dara silt loam, 5 to 10 percent slopes, eroded	1,571	0.3
264D2	El Dara silt loam, 10 to 18 percent slopes, eroded	1,826	0.3
264D3	El Dara sandy loam, 10 to 18 percent slopes, severely eroded	1,585	0.3
264E2	El Dara sandy loam, 18 to 25 percent slopes, eroded	2,279	0.4
264G	El Dara fine sandy loam, 35 to 60 percent slopes	31	*
267A	Caseyville silt loam, 0 to 2 percent slopes	511	*
267B	Caseyville silt loam, 2 to 5 percent slopes	1,081	0.2
271C2	Timula silt loam, 5 to 10 percent slopes, eroded	684	0.1
271D2	Timula silt loam, 10 to 18 percent slopes, eroded	880	0.2
279B	Rozetta silt loam, 2 to 5 percent slopes	13,699	2.5
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded	3,463	0.6
279C3	Rozetta silty clay loam, 5 to 10 percent slopes, severely eroded	788	0.1
283B	Downsouth silt loam, 2 to 5 percent slopes	9,202	1.7
283C2	Downsouth silt loam, 5 to 10 percent slopes, eroded	842	0.2
337A	Creal silt loam, 0 to 2 percent slopes	2,941	0.5
384A	Edwardsville silt loam, 0 to 2 percent slopes	4,656	0.8
384B	Edwardsville silt loam, 2 to 5 percent slopes	987	0.2
441B	Wakenda silt loam, 2 to 5 percent slopes	8,037	1.4
470B2	Keller silt loam, 2 to 5 percent slopes, eroded	2,903	0.5
470C	Keller silt loam, 5 to 10 percent slopes	2	*
470C2	Keller silt loam, 5 to 10 percent slopes, eroded	5,925	1.1
472C2	Baylis silt loam, 5 to 10 percent slopes, eroded	244	*
472D2	Baylis silt loam, 10 to 18 percent slopes, eroded	534	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
472E2	Baylis silt loam, 18 to 25 percent slopes, eroded	7	*
477B	Winfield silt loam, 2 to 5 percent slopes	20,688	3.7
477C2	Winfield silt loam, 5 to 10 percent slopes, eroded	7,176	1.3
477C3	Winfield silty clay loam, 5 to 10 percent slopes, severely eroded	1,229	0.2
515B2	Bunkum silt loam, 2 to 5 percent slopes, eroded	827	0.1
515C2	Bunkum silt loam, 5 to 10 percent slopes, eroded	13,170	2.4
515C3	Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded	9,861	1.8
515D2	Bunkum silt loam, 10 to 18 percent slopes, eroded	5,248	0.9
515D3	Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded	3,090	0.6
538B2	Emery silt loam, 2 to 5 percent slopes, eroded	2,718	0.5
538C2	Emery silt loam, 5 to 10 percent slopes, eroded	6,354	1.1
549D2	Marseilles silt loam, 10 to 18 percent slopes, eroded	754	0.1
549D3	Marseilles silty clay loam, 10 to 18 percent slopes, severely eroded	136	*
549F	Marseilles silt loam, 18 to 35 percent slopes	2,435	0.4
549G	Marseilles silt loam, 35 to 60 percent slopes	866	0.2
559F	Lindley loam, 18 to 35 percent slopes	7,334	1.3
559G	Lindley loam, 35 to 60 percent slopes	2,347	0.4
606F	Goss gravelly silt loam, 18 to 35 percent slopes	1,442	0.3
606G	Goss gravelly silt loam, 35 to 60 percent slopes	188	*
629C2	Crider silt loam, 5 to 10 percent slopes, eroded	118	*
629D2	Crider silt loam, 10 to 18 percent slopes, eroded	687	0.1
651C2	Keswick loam, 5 to 10 percent slopes, eroded	2,372	0.4
651C3	Keswick clay loam, 5 to 10 percent slopes, severely eroded	4,084	0.7
651D2	Keswick loam, 10 to 18 percent slopes, eroded	11,409	2.0
651D3	Keswick clay loam, 10 to 18 percent slopes, severely eroded	8,928	1.6
651E2	Keswick loam, 18 to 25 percent slopes, eroded	9,686	1.7
652C2	Passport silt loam, 5 to 10 percent slopes, eroded	103	*
652C3	Passport silty clay loam, 5 to 10 percent slopes, severely eroded	100	*
655C2	Ursa silt loam, moderately wet, 5 to 10 percent slopes, eroded	3,384	0.6
655C3	Ursa silty clay loam, moderately wet, 5 to 10 percent slopes, severely eroded	4,021	0.7
655D2	Ursa silt loam, moderately wet, 10 to 18 percent slopes, eroded	7,516	1.3
655D3	Ursa silty clay loam, moderately wet, 10 to 18 percent slopes, severely eroded	4,577	0.8
660C2	Coatsburg silt loam, 5 to 10 percent slopes, eroded	2,947	0.5
671A	Biggsville silt loam, 0 to 2 percent slopes	1,864	0.3
671B	Biggsville silt loam, 2 to 5 percent slopes	3,473	0.6
675B	Greenbush silt loam, 2 to 5 percent slopes	1,341	0.2
675C2	Greenbush silt loam, 5 to 10 percent slopes, eroded	16	*
678A	Mannon silt loam, 0 to 2 percent slopes	843	0.2
678B	Mannon silt loam, 2 to 5 percent slopes	3,332	0.6
785G	Lacrescent channery silt loam, 35 to 60 percent slopes	1,245	0.2
801B	Orthents, silty, undulating	1,415	0.3
816B	Stookey-Timula-Orthents complex, 1 to 7 percent slopes	2,177	0.4
816D	Stookey-Timula-Orthents complex, 7 to 15 percent slopes	399	*
829B	Biggsville-Mannon silt loams, 1 to 7 percent slopes	1,616	0.3
855A	Timewell and Ipava soils, 0 to 2 percent slopes	35,299	6.3
855B	Timewell and Ipava soils, 2 to 5 percent slopes	10,691	1.9
856F	Stookey and Timula soils, 18 to 35 percent slopes	3,521	0.6
856G	Stookey and Timula soils, 35 to 60 percent slopes	1,412	0.3
864	Pits, quarries	241	*
871G	Lenzburg silty clay loam, 20 to 60 percent slopes	211	*
1070L	Beaucoup silty clay loam, 0 to 2 percent slopes, undrained, occasionally flooded, long duration	1,315	0.2
3226A	Wirt silt loam, 0 to 2 percent slopes, frequently flooded	2,704	0.5
3331A	Haymond silt loam, 0 to 2 percent slopes, frequently flooded	4,959	0.9
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	22,025	4.0
3368L	Raveenwash silt loam, 0 to 2 percent slopes, frequently flooded, long duration	1,888	0.3
3396A	Vesser silt loam, 0 to 2 percent slopes, frequently flooded	728	0.1
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	6,779	1.2
3475A	Elsah gravelly loam, 0 to 2 percent slopes, frequently flooded	325	*
3634A	Blyton silt loam, 0 to 2 percent slopes, frequently flooded	4,683	0.8

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
3877L	Blake-Slacwater silt loams, 0 to 2 percent slopes, frequently flooded, long duration	11,156	2.0
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	12,231	2.2
8073A	Ross silt loam, 0 to 2 percent slopes, occasionally flooded	885	0.2
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	857	0.2
8092A	Sarpy sand, 0 to 2 percent slopes, occasionally flooded	205	*
8162A	Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded	1,185	0.2
8180A	Dupo silt loam, 0 to 2 percent slopes, occasionally flooded	1,479	0.3
8217A	Twomile silt loam, 0 to 2 percent slopes, occasionally flooded	2,734	0.5
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded	1,301	0.2
8333A	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded	3,967	0.7
8349B	Zumbro sandy loam, 1 to 6 percent slopes, occasionally flooded	393	*
8396A	Vesser silt loam, 0 to 2 percent slopes, occasionally flooded	3,163	0.6
8404A	Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded	9,292	1.7
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	1,684	0.3
8452A	Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded	4,426	0.8
8634A	Blyton silt loam, 0 to 2 percent slopes, occasionally flooded	1,061	0.2
W	Water	12,130	2.2
	Total	557,470	100.0

* Less than 0.1 percent.

Table 6.--Main Cropland Limitations and Hazards

(See text for a description of the limitations and hazards listed in this table. Absence of an entry indicates that the soil is generally not used for crops.)

Map symbol and soil name	Cropland limitations or hazards
6B2:	
Fishhook	Crusting Water erosion Wetness
6C2:	
Fishhook	Crusting Water erosion Wetness
6C3:	
Fishhook	Crusting Poor tilth Water erosion Wetness
6D2:	
Fishhook	Crusting Water erosion Wetness
6D3:	
Fishhook.	
7C2:	
Atlas	Crusting Water erosion Wetness
7C3:	
Atlas	Crusting Poor tilth Water erosion Wetness
8E2, 8F, 8G:	
Hickory.	
16A:	
Rushville	Crusting Ponding
17A:	
Keomah	Crusting Wetness
17B:	
Keomah	Crusting Water erosion Wetness
37A:	
Worthen	None
37B:	
Worthen	Water erosion
50A:	
Virden	Ponding

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
75A:	
Drury	None
75B:	
Drury	Water erosion
75C2:	
Drury	Water erosion
79B:	
Menfro	Crusting Water erosion
79C2:	
Menfro	Crusting Water erosion
79C3:	
Menfro	Crusting Poor tilth Water erosion
79D2:	
Menfro	Crusting Water erosion
79D3:	
Menfro	Crusting Poor tilth Water erosion
81A:	
Littleton	Wetness
86B:	
Osco	Water erosion
88B:	
Sparta	Excessive permeability Low available water capacity Water erosion Wind erosion
90A:	
Bethalto	Wetness
90B:	
Bethalto	Water erosion Wetness
111A:	
Rubio	Crusting Wetness
175F, 175G:	
Lamont.	
216B:	
Stookey	Crusting Water erosion
216C2:	
Stookey	Crusting Water erosion

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
216C3:	
Stookey	Crusting Water erosion
216D2:	
Stookey	Crusting Water erosion
216D3:	
Stookey	Crusting Water erosion
257A:	
Clarksdale	Crusting Wetness
257B:	
Clarksdale	Crusting Water erosion Wetness
264C2:	
El Dara	Crusting Water erosion
264D2:	
El Dara	Crusting Water erosion
264D3, 264E2, 264G:	
El Dara.	
267A:	
Caseyville	Crusting Wetness
267B:	
Caseyville	Crusting Water erosion Wetness
271C2:	
Timula	Water erosion
271D2:	
Timula	Water erosion
279B:	
Rozetta	Crusting Water erosion
279C2:	
Rozetta	Crusting Water erosion
279C3:	
Rozetta	Crusting Poor tilth Water erosion
283B:	
Downsouth	Crusting Water erosion

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
283C2:	
Downsouth	Crusting Water erosion
337A:	
Creal	Crusting Wetness
384A:	
Edwardsville	Wetness
384B:	
Edwardsville	Water erosion Wetness
441B:	
Wakenda	Water erosion
470B2:	
Keller	Water erosion Wetness
470C:	
Keller	Water erosion Wetness
470C2:	
Keller	Water erosion Wetness
472C2:	
Baylis	Crusting Water erosion
472D2, 472E2:	
Baylis.	
477B:	
Winfield	Crusting Water erosion
477C2:	
Winfield	Crusting Water erosion
477C3:	
Winfield	Crusting Poor tilth Water erosion
515B2:	
Bunkum	Crusting Water erosion Wetness
515C2:	
Bunkum	Crusting Water erosion Wetness
515C3:	
Bunkum	Crusting Water erosion Wetness

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
515D2:	
Bunkum	Crusting Water erosion Wetness
515D3:	
Bunkum	Crusting Water erosion Wetness
538B2:	
Emery	Water erosion Wetness
538C2:	
Emery	Water erosion Wetness
549D2, 549D3, 549F, 549G:	
Marseilles.	
559F, 559G:	
Lindley.	
606F, 606G:	
Goss.	
629C2:	
Crider	Crusting Water erosion
629D2:	
Crider	Crusting Water erosion
651C2:	
Keswick	Crusting Water erosion
651C3:	
Keswick	Crusting Poor tilth Water erosion
651D2, 651D3, 651E2:	
Keswick.	
652C2:	
Passport	Crusting Water erosion Wetness
652C3:	
Passport	Crusting Poor tilth Water erosion Wetness
655C2:	
Ursa	Crusting Water erosion

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
655C3:	
Ursa	Crusting Poor tilth Water erosion
655D2:	
Ursa	Crusting Water erosion
655D3:	
Ursa.	
660C2:	
Coatsburg	Water erosion Wetness
671A:	
Biggsville	None
671B:	
Biggsville	Water erosion
675B:	
Greenbush	Crusting Water erosion
675C2:	
Greenbush	Crusting Water erosion
678A:	
Mannon	Crusting
678B:	
Mannon	Crusting Water erosion
785G:	
Lacrescent.	
801B:	
Orthents	Crusting Water erosion
816B, 816D:	
Stookey-Timula-Orthents.	
829B:	
Biggsville-Mannon.	
855A:	
Timewell	Wetness
Ipava	Wetness
855B:	
Timewell	Water erosion Wetness
Ipava	Water erosion Wetness
864:	
Pits.	

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
871G:	
Lenzburg.	
1070L:	
Beaucoup.	
3226A:	
Wirt	Flooding
3331A:	
Haymond	Flooding
3333A:	
Wakeland	Flooding Wetness
3368L:	
Raveenwash.	
3396A:	
Vesser	Crusting Flooding Wetness
3451A:	
Lawson	Flooding Wetness
3475A:	
Elsah	Excessive permeability Flooding Rock fragments
3634A:	
Blyton	Flooding
3877L:	
Blake-Slacwater.	
8070A:	
Beaucoup	Flooding Ponding Poor tilth
8073A:	
Ross	Flooding
8077A:	
Huntsville	Flooding
8092A:	
Sarpy	Excessive permeability Flooding Low available water capacity Wind erosion
8162A:	
Gorham	Excessive permeability Flooding Poor tilth Wetness
8180A:	
Dupo	Flooding Wetness

Table 6.--Main Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations or hazards
8217A:	
Twomile	Flooding Wetness
8284A:	
Tice	Flooding Poor tilth Wetness
8333A:	
Wakeland	Flooding Wetness
8349B:	
Zumbro	Excessive permeability Flooding Water erosion
8396A:	
Vesser	Crusting Flooding Wetness
8404A:	
Titus	Flooding Ponding Poor tilth
8451A:	
Lawson	Flooding Wetness
8452A:	
Riley	Excessive permeability Flooding Poor tilth Wetness
8634A:	
Blyton	Flooding
W:	
Water.	

Table 7.--Main Pasture Limitations and Hazards

(See text for a description of the limitations and hazards listed in this table. Absence of an entry indicates that the soil is generally not used for pasture.)

Map symbol and soil name	Pasture limitations or hazards
6B2:	
Fishhook	Frost heave
	Low pH
	Water erosion
	Wetness
6C2:	
Fishhook	Frost heave
	Low pH
	Water erosion
	Wetness
6C3:	
Fishhook	Frost heave
	Low fertility
	Low pH
	Water erosion
	Wetness
6D2:	
Fishhook	Equipment limitation
	Frost heave
	Low pH
	Water erosion
	Wetness
6D3:	
Fishhook	Equipment limitation
	Frost heave
	Low fertility
	Low pH
	Water erosion
	Wetness
7C2:	
Atlas	Frost heave
	Low pH
	Water erosion
	Wetness
7C3:	
Atlas	Frost heave
	Low fertility
	Low pH
	Water erosion
	Wetness
8E2:	
Hickory	Equipment limitation
	Frost heave
	Low pH
	Water erosion
8F:	
Hickory	Equipment limitation
	Frost heave
	Low pH
	Water erosion

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
16A:	
Rushville	Frost heave Low pH Ponding
17A:	
Keomah	Frost heave Low pH Wetness
17B:	
Keomah	Frost heave Low pH Water erosion Wetness
37A, 37B:	
Worthen.	
50A:	
Virden.	
75A:	
Drury	Frost heave
75B:	
Drury	Frost heave Water erosion
75C2:	
Drury	Frost heave Water erosion
79B:	
Menfro	Frost heave Low pH Water erosion
79C2:	
Menfro	Frost heave Low pH Water erosion
79C3:	
Menfro	Frost heave Low fertility Low pH Water erosion
79D2:	
Menfro	Equipment limitation Frost heave Low pH Water erosion
79D3:	
Menfro	Equipment limitation Frost heave Low fertility Low pH Water erosion
81A:	
Littleton.	

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
86B:	
Osco.	
88B:	
Sparta	Low pH Water erosion Wind erosion
90A:	
Bethalto	Frost heave Low pH Wetness
90B:	
Bethalto	Frost heave Low pH Water erosion Wetness
111A:	
Rubio	Frost heave Low pH Wetness
175F, 175G:	
Lamont.	
216B:	
Stookey	Frost heave Low pH Water erosion
216C2:	
Stookey	Frost heave Low pH Water erosion
216C3:	
Stookey	Frost heave Low fertility Low pH Water erosion
216D2:	
Stookey	Equipment limitation Frost heave Low pH Water erosion
216D3:	
Stookey	Equipment limitation Frost heave Low fertility Low pH Water erosion
257A:	
Clarksdale	Frost heave Low pH Wetness

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
257B:	
Clarksdale	Frost heave Low pH Water erosion Wetness
264C2:	
El Dara	Frost heave Low pH Water erosion
264D2:	
El Dara	Equipment limitation Frost heave Low pH Water erosion
264D3:	
El Dara	Equipment limitation Frost heave Low fertility Low pH Water erosion
264E2:	
El Dara	Equipment limitation Frost heave Low pH Water erosion
264G:	
El Dara.	
267A:	
Caseyville	Frost heave Low pH Wetness
267B:	
Caseyville	Frost heave Low pH Water erosion Wetness
271C2:	
Timula	Frost heave Water erosion
271D2:	
Timula	Equipment limitation Frost heave Water erosion
279B:	
Rozetta	Frost heave Low pH Water erosion
279C2:	
Rozetta	Frost heave Low pH Water erosion

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
279C3:	
Rozetta	Frost heave Low fertility Low pH Water erosion
283B:	
Downsouth	Frost heave Low pH Water erosion
283C2:	
Downsouth	Frost heave Low pH Water erosion
337A:	
Creal	Frost heave Low pH Wetness
384A, 384B:	
Edwardsville.	
441B:	
Wakenda.	
470B2:	
Keller.	
470C:	
Keller	Frost heave Low pH Water erosion Wetness
470C2:	
Keller	Frost heave Low pH Water erosion Wetness
472C2:	
Baylis	Frost heave Low pH Water erosion
472D2:	
Baylis	Equipment limitation Frost heave Low pH Water erosion
472E2:	
Baylis.	
477B:	
Winfield	Frost heave Low pH Water erosion
477C2:	
Winfield	Frost heave Low pH Water erosion

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
477C3:	
Winfield	Frost heave Low fertility Low pH Water erosion
515B2:	
Bunkum	Frost heave Low pH Water erosion Wetness
515C2:	
Bunkum	Frost heave Low pH Water erosion Wetness
515C3:	
Bunkum	Frost heave Low fertility Low pH Water erosion Wetness
515D2:	
Bunkum	Equipment limitation Frost heave Low pH Water erosion Wetness
515D3:	
Bunkum	Equipment limitation Frost heave Low fertility Low pH Water erosion Wetness
538B2:	
Emery	Frost heave Low pH Water erosion Wetness
538C2:	
Emery	Frost heave Low pH Water erosion Wetness
549D2, 549D3, 549F, 549G:	
Marseilles.	
559F:	
Lindley	Equipment limitation Frost heave Low pH Water erosion
559G:	
Lindley.	

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
606F, 606G:	
Goss.	
629C2:	
Crider	Frost heave Low pH Water erosion
629D2:	
Crider	Equipment limitation Frost heave Low pH Water erosion
651C2:	
Keswick	Frost heave Low pH Water erosion
651C3:	
Keswick	Frost heave Low fertility Low pH Water erosion
651D2:	
Keswick	Equipment limitation Frost heave Low pH Water erosion
651D3, 651E2:	
Keswick.	
652C2:	
Passport	Frost heave Low pH Water erosion Wetness
652C3:	
Passport	Frost heave Low fertility Low pH Water erosion Wetness
655C2:	
Ursa	Frost heave Low pH Water erosion
655C3:	
Ursa	Frost heave Low fertility Low pH Water erosion
655D2:	
Ursa	Equipment limitation Frost heave Low pH Water erosion

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
655D3:	
Ursa	Equipment limitation Frost heave Low fertility Low pH Water erosion
660C2:	
Coatsburg	Frost heave Low pH Water erosion Wetness
671A, 671B:	
Biggsville.	
675B:	
Greenbush	Frost heave Low pH Water erosion
675C2:	
Greenbush	Frost heave Low pH Water erosion
678A:	
Mannon	Frost heave Low pH
678B:	
Mannon	Frost heave Low pH Water erosion
801B:	
Orthents	Frost heave Low fertility Low pH Water erosion
816B, 816D:	
Stookey-Timula-Orthents.	
829B:	
Biggsville-Mannon.	
855A, 855B:	
Timewell and Ipava.	
856F:	
Stookey	Equipment limitation Frost heave Low pH Water erosion
Timula	Equipment limitation Frost heave Water erosion
856G:	
Stookey and Timula.	

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
864:	
Pits.	
871G:	
Lenzburg.	
1070L:	
Beaucoup.	
3226A:	
Wirt	Flooding Frost heave
3331A:	
Haymond	Flooding Frost heave
3333A:	
Wakeland	Flooding Frost heave Wetness
3368L:	
Raveenwash.	
3396A:	
Vesser.	
3451A:	
Lawson.	
3475A:	
Elsah	Flooding Frost heave Surface rock fragments
3634A:	
Blyton	Flooding Frost heave
3877L:	
Blake-Slacwater.	
8070A:	
Beaucoup.	
8073A:	
Ross.	
8077A:	
Huntsville.	
8092A:	
Sarpy	Flooding Low available water capacity Low fertility Wind erosion
8162A:	
Gorham.	

Table 7.--Main Pasture Limitations and Hazards--Continued

Map symbol and soil name	Pasture limitations or hazards
8180A:	
Dupo	Flooding Frost heave Wetness
8217A:	
Twomile	Flooding Frost heave Low pH Wetness
8284A:	
Tice.	
8333A:	
Wakeland	Flooding Frost heave Wetness
8349B:	
Zumbro	Flooding Water erosion
8396A:	
Vesser.	
8404A:	
Titus.	
8451A:	
Lawson.	
8452A:	
Riley.	
8634A:	
Blyton	Flooding Frost heave
W:	
Water.	

Table 8.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
6B2:						
Fishhook	2e	71	21	23	2.4	4.1
6C2:						
Fishhook	3e	69	20	22	2.4	3.9
6C3:						
Fishhook	4e	58	17	18	2.0	3.3
6D2:						
Fishhook	4e	65	19	22	2.2	3.7
6D3:						
Fishhook	6e	---	---	---	1.8	3.1
7C2:						
Atlas	3e	52	16	19	2.2	3.6
7C3:						
Atlas	4e	43	14	16	1.8	3.0
8E2:						
Hickory	6e	---	---	---	2.3	3.9
8F:						
Hickory	6e	---	---	---	2.4	4.0
8G:						
Hickory	7e	---	---	---	---	---
16A:						
Rushville	3w	114	36	---	4.2	7.0
17A:						
Keomah	2w	129	39	52	5.1	8.5
17B:						
Keomah	2e	128	39	51	5.0	8.4
37A:						
Worthen	1	151	46	62	---	---
37B:						
Worthen	2e	149	46	61	---	---
50A:						
Virden	2w	138	46	---	---	---
75A:						
Drury	1	126	40	57	5.0	8.3
75B:						
Drury	2e	125	40	56	4.9	8.2

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
75C2:						
Drury	3e	118	38	54	4.7	7.8
79B:						
Menfro	2e	128	39	52	5.1	8.6
79C2:						
Menfro	3e	121	37	50	4.9	8.2
79C3:						
Menfro	3e	112	34	45	4.5	7.6
79D2:						
Menfro	4e	116	35	48	4.7	7.8
79D3:						
Menfro	4e	107	32	44	4.3	7.2
81A:						
Littleton	1	159	50	63	---	---
86B:						
Osco	2e	153	46	61	---	---
88B:						
Sparta	4s	84	29	37	3.3	5.4
90A:						
Bethalto	2w	149	44	60	5.6	9.3
90B:						
Bethalto	2e	148	44	59	5.5	9.1
111A:						
Rubio	3w	120	37	---	4.8	8.0
175F:						
Lamont	7e	---	---	---	---	---
175G:						
Lamont	7e	---	---	---	---	---
216B:						
Stookey	2e	117	35	49	4.8	7.8
216C2:						
Stookey	3e	110	33	46	4.5	7.4
216C3:						
Stookey	4e	103	30	43	4.2	7.0
216D2:						
Stookey	3e	105	32	46	4.3	7.2
216D3:						
Stookey	4e	98	29	41	4.0	6.6
257A:						
Clarksdale	1	140	43	57	5.3	8.8

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
257B:						
Clarksdale----------	2e	139	43	56	5.2	8.7
264C2:						
El Dara-------------	3e	82	29	37	3.3	5.6
264D2:						
El Dara-------------	3e	78	28	36	3.2	5.3
264D3:						
El Dara-------------	6e	---	---	---	2.9	4.8
264E2:						
El Dara-------------	6e	---	---	---	2.7	4.5
264G:						
El Dara-------------	7e	---	---	---	---	---
267A:						
Caseyville----------	2w	138	42	55	5.3	8.8
267B:						
Caseyville----------	2e	137	42	54	5.2	8.7
271C2:						
Timula--------------	3e	97	33	42	3.9	6.6
271D2:						
Timula--------------	3e	93	32	40	3.8	6.1
279B:						
Rozetta-------------	2e	130	40	53	5.1	8.6
279C2:						
Rozetta-------------	3e	123	38	51	4.9	8.2
279C3:						
Rozetta-------------	4e	114	35	47	4.5	7.6
283B:						
Downsouth-----------	2e	147	42	57	5.5	9.2
283C2:						
Downsouth-----------	3e	139	40	55	5.3	8.7
337A:						
Creal---------------	2w	109	35	51	4.3	7.2
384A:						
Edwardsville--------	1	167	51	64	---	---
384B:						
Edwardsville--------	2e	165	50	63	---	---
441B:						
Wakenda-------------	2e	153	46	61	---	---
470B2:						
Keller--------------	2e	88	31	41	---	---

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
470C:						
Keller--------------	3e	90	32	42	3.8	6.4
470C2:						
Keller--------------	3e	86	30	40	3.6	6.0
472C2:						
Baylis--------------	4e	86	29	38	3.3	5.5
472D2:						
Baylis--------------	6e	---	---	---	3.1	5.2
472E2:						
Baylis--------------	7e	---	---	---	---	---
477B:						
Winfield------------	2e	130	40	53	5.1	8.6
477C2:						
Winfield------------	3e	123	38	51	4.9	8.2
477C3:						
Winfield------------	4e	114	35	47	4.5	7.6
515B2:						
Bunkum--------------	2e	99	37	47	4.1	6.5
515C2:						
Bunkum--------------	3e	93	35	44	4.0	6.4
515C3:						
Bunkum--------------	4e	86	32	41	3.7	5.9
515D2:						
Bunkum--------------	3e	85	32	40	3.8	6.2
515D3:						
Bunkum--------------	4e	82	31	39	3.6	5.6
538B2:						
Emery---------------	2e	143	42	58	5.4	8.9
538C2:						
Emery---------------	3e	140	41	56	5.3	8.7
549D2:						
Marseilles----------	4e	90	31	40	3.9	6.3
549D3:						
Marseilles----------	6e	---	---	---	3.1	5.2
549F:						
Marseilles----------	7e	---	---	---	---	---
549G:						
Marseilles----------	7e	---	---	---	---	---
559F:						
Lindley-------------	6e	---	---	---	2.4	4.0

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
559G:						
Lindley	7e	---	---	---	---	---
606F:						
Goss	7e	---	---	---	---	---
606G:						
Goss	7e	---	---	---	---	---
629C2:						
Crider	3e	102	34	44	4.2	7.1
629D2:						
Crider	4e	97	32	42	4.1	6.8
651C2:						
Keswick	3e	57	16	20	2.2	3.7
651C3:						
Keswick	4e	48	14	17	1.8	3.0
651D2:						
Keswick	6e	---	---	---	1.6	3.4
651D3:						
Keswick	7e	---	---	---	---	---
651E2:						
Keswick	7e	---	---	---	---	---
652C2:						
Passport	3e	78	25	31	2.9	4.8
652C3:						
Passport	4e	65	21	26	2.4	4.0
655C2:						
Ursa	3e	57	16	20	2.2	3.7
655C3:						
Ursa	4e	48	13	17	1.8	3.0
655D2:						
Ursa	4e	54	15	19	2.1	3.4
655D3:						
Ursa	6e	---	---	---	1.7	2.8
660C2:						
Coatsburg	3e	73	23	25	2.9	4.8
671A:						
Biggsville	1	150	45	61	---	---
671B:						
Biggsville	2e	149	45	60	---	---
675B:						
Greenbush	2e	147	42	57	5.5	9.2

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
675C2:						
Greenbush-----------	3e	139	40	55	5.3	8.7
678A:						
Mannon--------------	1	142	45	59	5.4	9.0
678B:						
Mannon--------------	2e	140	45	58	5.3	8.9
785G:						
Lacrescent----------	7e	---	---	---	---	---
801B:						
Orthents------------	2e	81	21	28	4.4	8.1
816B:						
Stookey-Timula-Orthents-----------	2e	---	---	---	---	---
816D:						
Stookey-Timula-Orthents-----------	4e	---	---	---	---	---
829B:						
Biggsville-Mannon---	2e	---	---	---	---	---
855A:						
Timewell and Ipava--	1	159	51	65	---	---
855B:						
Timewell and Ipava--	2e	157	50	64	---	---
856F:						
Stookey and Timula--	6e	---	---	---	3.7	6.0
856G:						
Stookey and Timula--	7e	---	---	---	---	---
864:						
Pits.						
871G:						
Lenzburg------------	7e	---	---	---	---	---
1070L:						
Beaucoup------------	5w	---	---	---	---	---
3226A:						
Wirt----------------	2w	95	33	42	4.0	7.4
3331A:						
Haymond-------------	2w	126	41	54	4.8	7.9
3333A:						
Wakeland------------	2w	122	41	51	4.7	7.8
3368L:						
Raveenwash----------	5w	---	---	---	---	---

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
3396A:						
Vesser	2w	113	38	---	---	---
3451A:						
Lawson	3w	145	43	56	---	---
3475A:						
Elsah	2s	102	35	47	4.1	6.9
3634A:						
Blyton	2w	121	40	50	4.5	7.5
3877L:						
Blake-Slacwater	5w	---	---	---	---	---
8070A:						
Beaucoup	2w	138	46	---	---	---
8073A:						
Ross	2w	145	46	60	---	---
8077A:						
Huntsville	2w	152	48	64	---	---
8092A:						
Sarpy	4s	71	26	34	3.0	5.0
8162A:						
Gorham	2w	141	46	---	---	---
8180A:						
Dupo	2w	132	43	55	5.2	8.7
8217A:						
Twomile	3w	86	30	---	3.2	5.3
8284A:						
Tice	2w	153	47	61	---	---
8333A:						
Wakeland	2w	135	45	57	5.2	8.7
8349B:						
Zumbro	3s	85	28	37	3.5	5.8
8396A:						
Vesser	2w	126	42	---	---	---
8404A:						
Titus	3w	125	42	---	---	---
8451A:						
Lawson	3w	161	48	62	---	---
8452A:						
Riley	2w	122	41	55	---	---
8634A:						
Blyton	2w	134	44	55	5.0	8.3

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
W:						
Water.						

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 9.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
17B	Keomah silt loam, 2 to 5 percent slopes
37A	Worthen silt loam, 0 to 2 percent slopes
37B	Worthen silt loam, 2 to 5 percent slopes
50A	Virden silty clay loam, 0 to 2 percent slopes (where drained)
75A	Drury silt loam, 0 to 2 percent slopes
75B	Drury silt loam, 2 to 5 percent slopes
79B	Menfro silt loam, 2 to 5 percent slopes
81A	Littleton silt loam, 0 to 2 percent slopes
86B	Osco silt loam, 2 to 5 percent slopes
90A	Bethalto silt loam, 0 to 2 percent slopes (where drained)
90B	Bethalto silt loam, 2 to 5 percent slopes
111A	Rubio silt loam, 0 to 2 percent slopes (where drained)
216B	Stookey silt loam, 2 to 5 percent slopes
257A	Clarksdale silt loam, 0 to 2 percent slopes (where drained)
257B	Clarksdale silt loam, 2 to 5 percent slopes
267A	Caseyville silt loam, 0 to 2 percent slopes (where drained)
267B	Caseyville silt loam, 2 to 5 percent slopes
279B	Rozetta silt loam, 2 to 5 percent slopes
283B	Downsouth silt loam, 2 to 5 percent slopes
337A	Creal silt loam, 0 to 2 percent slopes (where drained)
384A	Edwardsville silt loam, 0 to 2 percent slopes
384B	Edwardsville silt loam, 2 to 5 percent slopes
441B	Wakenda silt loam, 2 to 5 percent slopes
470B2	Keller silt loam, 2 to 5 percent slopes, eroded
477B	Winfield silt loam, 2 to 5 percent slopes
515B2	Bunkum silt loam, 2 to 5 percent slopes, eroded
538B2	Emery silt loam, 2 to 5 percent slopes, eroded
671A	Biggsville silt loam, 0 to 2 percent slopes
671B	Biggsville silt loam, 2 to 5 percent slopes
675B	Greenbush silt loam, 2 to 5 percent slopes
678A	Mannon silt loam, 0 to 2 percent slopes
678B	Mannon silt loam, 2 to 5 percent slopes
855A	Timewell and Ipava soils, 0 to 2 percent slopes
855B	Timewell and Ipava soils, 2 to 5 percent slopes
3226A	Wirt silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3331A	Haymond silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3396A	Vesser silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3634A	Blyton silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8073A	Ross silt loam, 0 to 2 percent slopes, occasionally flooded
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8162A	Gorham silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8180A	Dupo silt loam, 0 to 2 percent slopes, occasionally flooded
8217A	Twomile silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded
8333A	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8396A	Vesser silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)

Table 9.--Prime Farmland--Continued

Map symbol	Soil name
8404A	Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8452A	Riley silty clay loam, 0 to 2 percent slopes, occasionally flooded
8634A	Blyton silt loam, 0 to 2 percent slopes, occasionally flooded

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height.)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
6B2:					
Fishhook	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
6C2:					
Fishhook	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
6C3:					
Fishhook	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
6D2:					
Fishhook	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
6D3:					
Fishhook	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
7C2:					
Atlas	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
7C3:					
Atlas	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
8E2:					
Hickory	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8F:					
Hickory	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8G:					
Hickory	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
16A:					
Rushville	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
17A:					
Keomah	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
17B:					
Keomah	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
37A:					
Worthen	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
37B:					
Worthen	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
50A:					
Virden	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
75A:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
75B:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
75C2:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
79B:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
79C2:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
79C3:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
79D2:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
79D3:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
81A:					
Littleton	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
86B:					
Osco	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
88B:					
Sparta	American plum, common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American cranberrybush, American hazelnut, American witchhazel, alternateleaf dogwood, nannyberry, prairie crabapple, shadbush.	Blue spruce, eastern redcedar, green ash, northern white-cedar.	Eastern white pine.	---
90A:					
Bethalto	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
90B:					
Bethalto	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
111A:					
Rubio	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
175F:					
Lamont	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.
175G:					
Lamont	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
216B:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
216C2:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
216C3:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
216D2:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
216D3:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
257A:					
Clarksdale	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
257B:					
Clarksdale	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
264C2: El Dara	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.
264D2: El Dara	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.
264D3: El Dara	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.
264E2: El Dara	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.
264G: El Dara	American plum, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, American witchhazel, Arnold hawthorn, blackhaw, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern red oak, northern white-cedar, tuliptree.	Norway spruce, common hackberry, eastern white pine, pin oak.	Eastern cottonwood.
267A: Caseyville	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
267B:					
Caseyville	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
271C2:					
Timula	Common winterberry, coralberry, gray dogwood, redosier dogwood, roughleaf dogwood, silky dogwood.	American hazelnut, American witchhazel, blackhaw, shadbush.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	Norway spruce	Eastern white pine.
271D2:					
Timula	Common winterberry, coralberry, gray dogwood, redosier dogwood, roughleaf dogwood, silky dogwood.	American hazelnut, American witchhazel, blackhaw, shadbush.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	Norway spruce	Eastern white pine.
279B:					
Rozetta	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
279C2:					
Rozetta	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
279C3:					
Rozetta	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
283B:					
Downsouth	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
283C2: Downsouth	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
337A: Creal	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
384A: Edwardsville	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
384B: Edwardsville	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
441B: Wakenda	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
470B2: Keller	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
470C: Keller	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
470C2:					
Keller	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
472C2:					
Baylis	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, alternateleaf dogwood, eastern redcedar, nannyberry, northern white-cedar, prairie crabapple, shadbush.	Eastern white pine, green ash.	---	---
472D2:					
Baylis	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, alternateleaf dogwood, eastern redcedar, nannyberry, northern white-cedar, prairie crabapple, shadbush.	Eastern white pine, green ash.	---	---
472E2:					
Baylis	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, alternateleaf dogwood, eastern redcedar, nannyberry, northern white-cedar, prairie crabapple, shadbush.	Eastern white pine, green ash.	---	---
477B:					
Winfield	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
477C2:					
Winfield	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
477C3: Winfield	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
515B2: Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
515C2: Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
515C3: Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
515D2: Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
515D3: Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
538B2: Emery	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
538C2:					
Emery	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
549D2:					
Marseilles	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
549D3:					
Marseilles	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
549F:					
Marseilles	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
549G:					
Marseilles	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
559F:					
Lindley	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
559G:					
Lindley	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
606F:					
Goss	American plum, black chokeberry, blackhaw, gray dogwood, mapleleaf viburnum.	Cock's-spur hawthorn, eastern redcedar, eastern white pine, nannyberry, prairie crabapple, shadbush.	Black locust, thornless honeylocust.	---	---
606G:					
Goss	American plum, black chokeberry, blackhaw, gray dogwood, mapleleaf viburnum.	Cock's-spur hawthorn, eastern redcedar, eastern white pine, nannyberry, prairie crabapple, shadbush.	Black locust, thornless honeylocust.	---	---
629C2:					
Crider	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
629D2:					
Crider	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
651C2:					
Keswick	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
651C3:					
Keswick	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
651D2:					
Keswick	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
651D3:					
Keswick	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
651E2:					
Keswick	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
652C2:					
Passport	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
652C3:					
Passport	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
655C2: Ursa	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
655C3: Ursa	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
655D2: Ursa	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
655D3: Ursa	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American hazelnut, Washington hawthorn, blackhaw, nannyberry, prairie crabapple, shadbush.	Baldcypress, eastern redcedar, green ash, northern white-cedar.	Norway spruce, eastern white pine, pin oak.	Eastern cottonwood.
660C2: Coatsburg	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
671A: Biggsville	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
671B:					
Biggsville	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
675B:					
Greenbush	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
675C2:					
Greenbush	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
678A:					
Mannon	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
678B:					
Mannon	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
785G:					
Lacrescent	American plum, black chokeberry, blackhaw, gray dogwood, mapleleaf viburnum.	Cock's-spur hawthorn, eastern redcedar, eastern white pine, nannyberry, prairie crabapple, shadbush.	Black locust, thornless honeylocust.	---	---
801B:					
Orthents	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, green ash, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
816B:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
Timula	Common winterberry, coralberry, gray dogwood, redosier dogwood, roughleaf dogwood, silky dogwood.	American hazelnut, American witchhazel, blackhaw, shadbush, southern arrowwood.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	Norway spruce	Eastern white pine.
Orthents	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
816D:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
Timula	Common winterberry, coralberry, gray dogwood, redosier dogwood, roughleaf dogwood, silky dogwood.	American hazelnut, American witchhazel, blackhaw, shadbush, southern arrowwood.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	Norway spruce	Eastern white pine.
Orthents	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
829B:					
Biggsville	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
829B:					
Mannon	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
855A:					
Timewell	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
Ipava	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
855B:					
Timewell	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
Ipava	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
856F:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
Timula	Common winterberry, coralberry, gray dogwood, redosier dogwood, roughleaf dogwood, silky dogwood.	American hazelnut, American witchhazel, blackhaw, shadbush, southern arrowwood.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	Norway spruce	Eastern white pine.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
856G:					
Stookey	Common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood.	American hazelnut, American plum, blackhaw, prairie crabapple, roughleaf dogwood.	Eastern redcedar, nannyberry, northern white-cedar, shadbush.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
Timula	Common winterberry, coralberry, gray dogwood, redosier dogwood, roughleaf dogwood, silky dogwood.	American hazelnut, American witchhazel, blackhaw, shadbush, southern arrowwood.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	Norway spruce	Eastern white pine.
864:					
Pits.					
871G:					
Lenzburg	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood.	Downy arrowwood, eastern redcedar, shadbush, southern arrowwood.	Common hackberry, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood.	---
1070L:					
Beaucoup	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
3226A:					
Wirt	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
3331A:					
Haymond	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
3333A:					
Wakeland	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3368L:					
Raveenwash	Coralberry, mapleleaf viburnum, redosier dogwood.	Blackhaw, downy arrowwood, shadbush, southern arrowwood.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	---	---
3396A:					
Vesser	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
3451A:					
Lawson	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
3475A:					
Elsah	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
3634A:					
Blyton	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
3877L:					
Blake	Coralberry, mapleleaf viburnum, redosier dogwood.	Blackhaw, downy arrowwood, shadbush, southern arrowwood.	Common hackberry, eastern redcedar, green ash, nannyberry, northern red oak, northern white-cedar.	---	---
Slacwater	Coralberry, mapleleaf viburnum, redosier dogwood.	Blackhaw, cock's-spur hawthorn, nannyberry, shadbush, silky dogwood.	Common hackberry, eastern redcedar, northern red oak, northern white-cedar.	Baldcypress, green ash.	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8070A: Beaucoup	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
8073A: Ross	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8077A: Huntsville	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8092A: Sarpy	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8162A: Gorham	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
8180A: Dupo	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8217A: Twomile	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8284A:					
Tice	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8333A:					
Wakeland	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8349B:					
Zumbro	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8396A:					
Vesser	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
8404A:					
Titus	Black chokeberry, coralberry, gray dogwood, mapleleaf viburnum.	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood.	Common hackberry, eastern redcedar, northern white-cedar, shadbush.	Norway spruce, baldcypress, eastern white pine, green ash, northern red oak, tuliptree.	Eastern cottonwood, pin oak.
8451A:					
Lawson	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
8452A:					
Riley	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8634A:					
Blyton	Black chokeberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood.	American plum, prairie crabapple, rusty blackhaw, shadbush.	Washington hawthorn, eastern redcedar, nannyberry, northern red oak, northern white-cedar.	Norway spruce, baldcypress, common hackberry, green ash, tuliptree.	Eastern cottonwood, eastern white pine, pin oak.
W:					
Water.					

Table 11.--Forestland Management and Productivity

(Only the soils suitable for production of commercial forestland are listed. See text for definitions of terms used in this table.)

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
6B2:										
Fishhook	4C	Slight	Slight	Slight	Moderate	Moderate	White oak	70	57	Eastern white pine,
							Northern red oak	70	57	green ash,
							Bur oak	---	---	northern red oak,
							Green ash	---	---	white oak
6C2:										
Fishhook	4C	Slight	Slight	Slight	Moderate	Moderate	White oak	70	57	Eastern white pine,
							Northern red oak	70	57	green ash,
							Bur oak	---	---	northern red oak,
							Green ash	---	---	white oak
6C3:										
Fishhook	4C	Slight	Slight	Slight	Moderate	Moderate	White oak	70	57	Eastern white pine,
							Northern red oak	70	57	green ash,
							Bur oak	---	---	northern red oak,
							Green ash	---	---	white oak
6D2:										
Fishhook	4C	Slight	Slight	Slight	Moderate	Moderate	White oak	70	57	Eastern white pine,
							Northern red oak	70	57	green ash,
							Bur oak	---	---	northern red oak,
							Green ash	---	---	white oak
6D3:										
Fishhook	4C	Slight	Slight	Slight	Moderate	Moderate	White oak	70	57	Eastern white pine,
							Northern red oak	70	57	green ash,
							Bur oak	---	---	northern red oak,
							Green ash	---	---	white oak
7C2:										
Atlas	4C	Slight	Slight	Moderate	Moderate	Slight	Bur oak	70	57	Eastern redcedar,
							White oak	70	57	green ash,
							Northern red oak	70	57	hickory, pin oak
							Green ash	---	---	
7C3:										
Atlas	4C	Slight	Slight	Moderate	Moderate	Slight	Bur oak	70	57	Eastern redcedar,
							White oak	70	57	green ash,
							Northern red oak	70	57	hickory, pin oak
							Green ash	---	---	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
8E2:										
Hickory	5R	Moderate	Moderate	Slight	Slight	Moderate	White oak	85	72	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	85	72	
							Black oak	---	---	
							Bitternut hickory	---	---	
							Green ash	---	---	
8F:										
Hickory	5R	Moderate	Moderate	Slight	Slight	Moderate	White oak	85	72	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	85	72	
							Black oak	---	---	
							Bitternut hickory	---	---	
							Green ash	---	---	
8G:										
Hickory	5R	Severe	Severe	Slight	Slight	Moderate	White oak	85	72	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	85	72	
							Black oak	---	---	
							Bitternut hickory	---	---	
							Green ash	---	---	
17A:										
Keomah	3A	Slight	Slight	Slight	Slight	Moderate	Northern red oak	70	57	Eastern white pine, green ash, northern red oak, white oak
							White oak	65	43	
17B:										
Keomah	3A	Slight	Slight	Slight	Slight	Moderate	Northern red oak	70	57	Eastern white pine, green ash, northern red oak, white oak
							White oak	65	43	
75A:										
Drury	7A	Slight	Slight	Slight	Slight	Moderate	White oak	85	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	85	72	
							Green ash	---	---	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
75B:										
Drury	7A	Slight	Slight	Slight	Slight	Moderate	White oak	85	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	85	72	
							Green ash	---	---	
75C2:										
Drury	7A	Slight	Slight	Slight	Slight	Moderate	White oak	85	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	85	72	
							Green ash	---	---	
79B:										
Menfro	4A	Slight	Slight	Slight	Slight	Severe	Northern red oak	81	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	73	57	
							White ash	70	72	
							White oak	59	43	
79C2:										
Menfro	4A	Slight	Slight	Slight	Slight	Severe	Northern red oak	81	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	73	57	
							White ash	70	72	
							White oak	59	43	
79C3:										
Menfro	4A	Slight	Slight	Slight	Slight	Severe	Northern red oak	81	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	73	57	
							White ash	70	72	
							White oak	59	43	
79D2:										
Menfro	4A	Slight	Slight	Slight	Slight	Severe	Northern red oak	81	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	73	57	
							White ash	70	72	
							White oak	59	43	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
79D3:										
Menfro	4A	Slight	Slight	Slight	Slight	Severe	Northern red oak	81	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	73	57	
							White ash	70	72	
							White oak	59	43	
88B:										
Sparta	4S	Slight	Slight	Severe	Slight	Slight	Northern red oak	70	57	Black oak, eastern redcedar, eastern white pine, red pine
90A:										
Bethalto	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	---	---	
							Green ash	---	---	
90B:										
Bethalto	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	---	---	
							Green ash	---	---	
111A:										
Rubio	2W	Slight	Severe	Moderate	Moderate	Severe	White oak	45	29	Baldcypress, bur oak, green ash, pin oak, swamp white oak
175F:										
Lamont	3R	Moderate	Moderate	Slight	Slight	Moderate	White oak	55	43	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	55	43	
175G:										
Lamont	3R	Severe	Severe	Slight	Slight	Moderate	White oak	55	43	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	55	43	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
216B:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							White oak	59	43	
216C2:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							White oak	59	43	
216C3:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							White oak	59	43	
216D2:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							White oak	59	43	
216D3:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							White oak	59	43	
257A:										
Clarksdale	4A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
257B:										
Clarksdale---------------	4A	Slight	Slight	Slight	Slight	Moderate	White oak-----------	80	57	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak----	80	57	
264C2:										
El Dara-----------------	4A	Slight	Slight	Slight	Slight	Moderate	Northern red oak----	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White oak-----------	80	57	
							Black walnut--------	---	---	
264D2:										
El Dara-----------------	4A	Slight	Slight	Slight	Slight	Moderate	Northern red oak----	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White oak-----------	80	57	
							Black walnut--------	---	---	
264D3:										
El Dara-----------------	4A	Slight	Slight	Slight	Slight	Moderate	Northern red oak----	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White oak-----------	80	57	
							Black walnut--------	---	---	
264E2:										
El Dara-----------------	4R	Moderate	Moderate	Slight	Slight	Moderate	Northern red oak----	80	57	Eastern white pine, green ash, northern red oak, white oak
							White oak-----------	80	57	
264G:										
El Dara-----------------	4R	Severe	Severe	Slight	Slight	Moderate	Northern red oak----	80	57	Eastern white pine, green ash, northern red oak, white oak
							White oak-----------	80	57	
267A:										
Caseyville--------------	4A	Slight	Slight	Slight	Slight	Severe	White oak-----------	75	57	Eastern white pine, green ash, northern red oak, white oak

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
267B:										
Caseyville	4A	Slight	Slight	Slight	Slight	Severe	White oak	75	57	Eastern white pine, green ash, northern red oak, white oak
271C2:										
Timula	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Bur oak	---	---	
							Northern red oak	---	---	
							Green ash	---	---	
271D2:										
Timula	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Bur oak	---	---	
							Northern red oak	---	---	
							Green ash	---	---	
279B:										
Rozetta	4A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	
							Black walnut	---	---	
279C2:										
Rozetta	4A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	
							Black walnut	---	---	
279C3:										
Rozetta	4A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	
							Black walnut	---	---	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
283B:										
Downsouth	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	---	---	
283C2:										
Downsouth	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	---	---	
337A:										
Creal	4A	Slight	Slight	Slight	Slight	Slight	White oak	70	57	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	70	57	
							Bur oak	---	---	
							Green ash	---	---	
472C2:										
Baylis	4A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	
							Black walnut	---	---	
472D2:										
Baylis	4A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	
							Black walnut	---	---	
472E2:										
Baylis	4R	Moderate	Moderate	Moderate	Slight	Moderate	White oak	80	57	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
477B:										
Winfield	3A	Slight	Slight	Slight	Slight	Severe	White oak	65	43	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	65	43	
							Northern red oak	60	43	
477C2:										
Winfield	3A	Slight	Slight	Slight	Slight	Severe	White oak	65	43	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	65	43	
							Northern red oak	60	43	
477C3:										
Winfield	3A	Slight	Slight	Slight	Slight	Severe	White oak	65	43	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black oak	65	43	
							Northern red oak	60	43	
515B2:										
Bunkum	4A	Slight	Moderate	Slight	Slight	Severe	White oak	75	57	Eastern white pine, green ash, northern red oak, white oak
515C2:										
Bunkum	4A	Slight	Moderate	Slight	Slight	Severe	White oak	75	57	Eastern white pine, green ash, northern red oak, white oak
515C3:										
Bunkum	4A	Slight	Moderate	Slight	Slight	Severe	White oak	75	57	Eastern white pine, green ash, northern red oak, white oak
515D2:										
Bunkum	4A	Slight	Moderate	Slight	Slight	Severe	White oak	75	57	Eastern white pine, green ash, northern red oak, white oak

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
515D3:										
Bunkum	4A	Slight	Moderate	Slight	Slight	Severe	White oak	75	57	Eastern white pine, green ash, northern red oak, white oak
538B2:										
Emery	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Scotch pine, eastern redcedar, eastern white pine, red pine
							Northern red oak	70	57	
							Bur oak	---	---	
							Green ash	---	---	
538C2:										
Emery	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Scotch pine, eastern redcedar, eastern white pine, red pine
							Northern red oak	70	57	
							Bur oak	---	---	
							Green ash	---	---	
549D2:										
Marseilles	2C	Slight	Slight	Severe	Severe	Slight	White oak	66	29	Eastern redcedar, green ash, hickory, pin oak
549D3:										
Marseilles	2C	Slight	Slight	Severe	Severe	Slight	White oak	66	29	Eastern redcedar, green ash, hickory, pin oak
549F:										
Marseilles	2R	Moderate	Moderate	Severe	Severe	Slight	White oak	66	29	Eastern redcedar, green ash, hickory, pin oak
549G:										
Marseilles	2R	Severe	Severe	Severe	Severe	Slight	White oak	66	29	Eastern redcedar, green ash, hickory, pin oak
559F:										
Lindley	3R	Moderate	Moderate	Slight	Slight	Severe	Black oak	63	43	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	61	43	
							White oak	56	43	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
559G:										
Lindley	3R	Severe	Severe	Slight	Slight	Severe	Black oak	63	43	Eastern white pine, green ash, northern red oak, white oak
							Northern red oak	61	43	
							White oak	56	43	
606F:										
Goss	3R	Moderate	Moderate	Slight	Slight	Slight	White oak	54	43	Eastern redcedar, eastern white pine, green ash, red pine, white oak
606G:										
Goss	3R	Moderate	Severe	Slight	Slight	Slight	White oak	54	43	Eastern redcedar, eastern white pine, green ash, red pine, white oak
629C2:										
Crider	7A	Slight	Slight	Slight	Slight	Severe	Black oak	87	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	84	72	
							Black walnut	80	---	
							White oak	72	57	
							White ash	---	---	
							Hickory	---	---	
629D2:										
Crider	7A	Slight	Slight	Slight	Slight	Severe	Black oak	87	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	84	72	
							Black walnut	80	---	
							White oak	72	57	
							White ash	---	---	
							Hickory	---	---	
651C2:										
Keswick	3C	Slight	Slight	Moderate	Severe	Slight	White oak	55	43	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	55	43	
651C3:										
Keswick	3C	Slight	Slight	Moderate	Severe	Slight	White oak	55	43	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	55	43	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
651D2:										
Keswick	3R	Moderate	Moderate	Moderate	Severe	Slight	White oak	55	43	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	55	43	
651D3:										
Keswick	3R	Moderate	Moderate	Moderate	Severe	Slight	White oak	55	43	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	55	43	
651E2:										
Keswick	3R	Moderate	Moderate	Moderate	Severe	Slight	White oak	55	43	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	55	43	
652C2:										
Passport	4C	Slight	Slight	Moderate	Slight	Severe	White oak	70	57	Eastern white pine, green ash, northern red oak, white oak
							Bur oak	70	57	
							Northern red oak	70	57	
							Green ash	---	---	
652C3:										
Passport	4C	Slight	Slight	Moderate	Slight	Severe	White oak	70	---	Eastern white pine, green ash, northern red oak, white oak
							Bur oak	70	57	
							Northern red oak	70	57	
							Green ash	---	---	
655C2:										
Ursa	4A	Slight	Slight	Slight	Slight	Slight	White oak	70	57	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	70	57	
							Black oak	70	57	
							Green ash	---	---	
655C3:										
Ursa	4A	Slight	Slight	Slight	Slight	Slight	White oak	70	57	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	70	57	
							Black oak	70	57	
							Green ash	---	---	
655D2:										
Ursa	4A	Slight	Slight	Slight	Slight	Slight	White oak	70	57	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak	70	57	
							Black oak	70	57	
							Green ash	---	---	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
655D3:										
Ursa-------------------	4A	Slight	Slight	Slight	Slight	Slight	White oak----------	70	57	Eastern redcedar, green ash, hickory, pin oak
							Northern red oak----	70	57	
							Black oak----------	70	57	
							Green ash----------	---	---	
675B:										
Greenbush--------------	4A	Slight	Slight	Slight	Slight	Moderate	White oak----------	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak----	80	57	
							Black walnut--------	---	---	
675C2:										
Greenbush--------------	4A	Slight	Slight	Slight	Slight	Moderate	White oak----------	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak----	80	57	
							Black walnut--------	---	---	
678A:										
Mannon-----------------	6A	Slight	Slight	Slight	Slight	Moderate	White oak----------	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak----	80	57	
							Black walnut--------	---	---	
678B:										
Mannon-----------------	6A	Slight	Slight	Slight	Slight	Moderate	White oak----------	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak----	80	57	
							Black walnut--------	---	---	
785G:										
Lacrescent-------------	3R	Severe	Severe	Slight	Slight	Moderate	American basswood---	62	57	Eastern redcedar, eastern white pine, green ash, red pine
							Northern red oak----	59	43	
							White oak----------	55	43	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
816B:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							Sugar maple	68	43	
							White oak	59	43	
Timula	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	---	---	
							Bur oak	---	---	
							Green ash	---	---	
Orthents.										
816D:										
Stookey	4A	Slight	Slight	Slight	Slight	Severe	Black oak	73	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							Sugar maple	68	43	
							White oak	59	43	
Timula	4A	Slight	Slight	Slight	Slight	Moderate	White oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	---	---	
							Bur oak	---	---	
							Green ash	---	---	
Orthents.										
829B:										
Biggsville.										
Mannon	6A	Slight	Slight	Slight	Slight	Moderate	White oak	80	57	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Northern red oak	80	57	
							Black walnut	---	---	
856F:										
Stookey	4R	Moderate	Moderate	Slight	Slight	Severe	Black oak	73	57	Eastern white pine, green ash, northern red oak, white oak
							White ash	70	72	
							Sugar maple	68	43	
							White oak	59	43	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
856F:										
Timula	4R	Moderate	Moderate	Moderate	Slight	Moderate	White oak	70	57	Eastern white pine,
							Bur oak	---	---	green ash,
							Northern red oak	---	---	northern red oak,
							Green ash	---	---	white oak
856G:										
Stookey	4R	Severe	Severe	Slight	Slight	Severe	Black oak	73	57	Eastern white pine,
							White ash	70	72	green ash,
							Sugar maple	68	43	northern red oak,
							White oak	59	43	white oak
Timula	4R	Severe	Severe	Severe	Slight	Moderate	White oak	70	57	Eastern white pine,
							Bur oak	---	---	green ash,
							Northern red oak	---	---	northern red oak,
							Green ash	---	---	white oak
871G:										
Lenzburg	5R	Severe	Severe	Slight	Slight	Moderate	Eastern cottonwood	---	---	Eastern white pine, green ash, northern red oak, white oak
1070L:										
Beaucoup	5W	Slight	Severe	Moderate	Moderate	Severe	Eastern cottonwood	100	129	American sycamore,
							Pin oak	90	72	baldcypress, bur
							American sycamore	---	---	oak, eastern cottonwood, green ash, pin oak, swamp white oak
3226A:										
Wirt	8A	Slight	Slight	Slight	Slight	Severe	Yellow-poplar	105	114	Eastern white pine, green ash, northern red oak, white oak
3331A:										
Haymond	8A	Slight	Moderate	Slight	Slight	Severe	Yellow-poplar	100	114	Black walnut,
							Green ash	---	---	eastern white
							Black walnut	---	---	pine, green ash, northern red oak, white oak

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
3333A:										
Wakeland	5A	Slight	Severe	Slight	Moderate	Severe	Yellow-poplar	90	88	Eastern white pine, green ash, northern red oak, white oak
							Green ash	---	---	
							Swamp white oak	---	---	
							American sycamore	---	---	
3368L:										
Raveenwash	11W	Slight	Slight	Moderate	Slight	Moderate	Eastern cottonwood	110	157	Eastern white pine, green ash, northern red oak, white oak
3451A:										
Lawson	2W	Slight	Moderate	Slight	Slight	Severe	Silver maple	70	29	Eastern white pine, green ash, northern red oak, white oak
							White ash	---	---	
3475A:										
Elsah	5F	Slight	Slight	Moderate	Slight	Moderate	Eastern cottonwood	95	114	Eastern white pine, green ash, northern red oak, white oak
							American sycamore	---	---	
3634A:										
Blyton	8A	Slight	Moderate	Slight	Slight	Severe	Pin oak	90	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black walnut	---	---	
							Green ash	---	---	
3877L:										
Blake	12A	Slight	Slight	Slight	Slight	Slight	Eastern cottonwood	115	172	Eastern white pine, green ash, northern red oak, white oak
							American sycamore	---	---	
							Silver maple	---	---	
Slacwater	11W	Slight	Severe	Severe	Severe	Severe	Eastern cottonwood	110	157	Baldcypress, bur oak, green ash, pin oak, swamp white oak

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
8070A:										
Beaucoup	5W	Slight	Severe	Moderate	Moderate	Severe	Eastern cottonwood	100	129	Baldcypress, bur oak, green ash, pin oak, swamp white oak
							Pin oak	90	72	
							American sycamore	---	---	
8073A:										
Ross	5A	Slight	Slight	Slight	Slight	Moderate	Northern red oak	86	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							White oak	---	---	
							Black cherry	---	---	
							Black walnut	---	---	
							White ash	---	---	
8077A:										
Huntsville	7A	Slight	Slight	Slight	Slight	Moderate	Eastern cottonwood	110	157	Black walnut, eastern white pine, green ash, northern red oak, white oak
							American sycamore	---	---	
							Green ash	---	---	
8092A:										
Sarpy	8S	Slight	Slight	Severe	Slight	Slight	Eastern cottonwood	95	114	Black oak, eastern cottonwood, eastern redcedar
8162A:										
Gorham	5W	Slight	Severe	Moderate	Moderate	Severe	Eastern cottonwood	100	129	Baldcypress, bur oak, green ash, pin oak, swamp white oak
							Pin oak	90	72	
							American sycamore	---	---	
8217A:										
Twomile	4W	Slight	Severe	Moderate	Moderate	Severe	Pin oak	80	57	Baldcypress, bur oak, green ash, pin oak, swamp white oak
8284A:										
Tice	5A	Slight	Slight	Slight	Slight	Severe	Pin oak	96	72	Eastern white pine, green ash, northern red oak, white oak
							Eastern cottonwood	---	---	
							Green ash	---	---	
							White ash	---	---	

Table 11.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
8333A:										
Wakeland----------------	5A	Slight	Severe	Slight	Moderate	Severe	Pin oak-------------	90	72	Eastern white pine, green ash, northern red oak, white oak
8404A:										
Titus-------------------	2W	Slight	Severe	Severe	Moderate	Severe	Eastern cottonwood--	99	129	Baldcypress, bur oak, green ash, pin oak, swamp white oak
							Silver maple--------	80	29	
							White ash-----------	51	29	
8451A:										
Lawson------------------	2A	Slight	Slight	Slight	Slight	Severe	Silver maple--------	70	29	Eastern white pine, green ash, northern red oak, white oak
							White ash-----------	---	---	
8634A:										
Blyton------------------	8A	Slight	Slight	Slight	Slight	Severe	Pin oak-------------	90	72	Black walnut, eastern white pine, green ash, northern red oak, white oak
							Black walnut--------	---	---	
							Green ash-----------	---	---	

Table 12.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
6B2:					
Fishhook	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Severe: erodes easily.	Moderate: wetness.
6C2:					
Fishhook	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: wetness.
6C3:					
Fishhook	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: wetness.
6D2:					
Fishhook	Severe: wetness.	Moderate: percs slowly, slope, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: slope, wetness.
6D3:					
Fishhook	Severe: wetness.	Moderate: percs slowly, slope, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: slope, wetness.
7C2:					
Atlas	Severe: percs slowly, wetness.	Severe: percs slowly, wetness.	Severe: percs slowly, slope, wetness.	Severe: wetness.	Severe: wetness.
7C3:					
Atlas	Severe: percs slowly, wetness.	Severe: percs slowly, wetness.	Severe: percs slowly, slope, wetness.	Severe: wetness.	Severe: wetness.
8E2:					
Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
8F:					
Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
8G:					
Hickory	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
16A:					
Rushville	Severe: percs slowly, ponding.	Severe: percs slowly, ponding.	Severe: percs slowly, ponding.	Severe: ponding.	Severe: ponding.
17A:					
Keomah	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
17B:					
Keomah	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
37A:					
Worthen	Slight	Slight	Slight	Slight	Slight.
37B:					
Worthen	Slight	Slight	Moderate: slope.	Slight	Slight.
50A:					
Virden	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
75A:					
Drury	Slight	Slight	Slight	Severe: erodes easily.	Slight.
75B:					
Drury	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
75C2:					
Drury	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.
79B:					
Menfro	Slight	Slight	Moderate: slope.	Slight	Slight.
79C2:					
Menfro	Slight	Slight	Severe: slope.	Slight	Slight.
79C3:					
Menfro	Slight	Slight	Severe: slope.	Slight	Slight.
79D2:					
Menfro	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
79D3:					
Menfro	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
81A:					
Littleton	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
86B:					
Osco	Slight	Slight	Moderate: slope.	Slight	Slight.
88B:					
Sparta	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, small stones.	Moderate: too sandy.	Moderate: droughty.
90A:					
Bethalto	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
90B:					
Bethalto	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
111A:					
Rubio	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
175F:					
Lamont	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
175G:					
Lamont	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
216B:					
Stookey	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
216C2:					
Stookey	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.
216C3:					
Stookey	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.
216D2:					
Stookey	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
216D3:					
Stookey	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
257A:					
Clarksdale	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
257B:					
Clarksdale	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
264C2:					
El Dara	Moderate: wetness.	Moderate: wetness.	Severe: slope.	Slight	Slight.
264D2:					
El Dara	Moderate: slope, wetness.	Moderate: slope, wetness.	Severe: slope.	Slight	Moderate: slope.
264D3:					
El Dara	Moderate: slope, wetness.	Moderate: slope, wetness.	Severe: slope.	Slight	Moderate: slope.
264E2:					
El Dara	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
264G:					
El Dara	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
267A:					
Caseyville	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
267B:					
Caseyville	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
271C2:					
Timula	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.
271D2:					
Timula	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
279B:					
Rozetta	Slight	Slight	Moderate: slope.	Slight	Slight.
279C2:					
Rozetta	Slight	Slight	Severe: slope.	Slight	Slight.
279C3:					
Rozetta	Slight	Slight	Severe: slope.	Slight	Slight.
283B:					
Downsouth	Moderate: wetness.	Moderate: wetness.	Moderate: slope, wetness.	Severe: erodes easily.	Slight: wetness.
283C2:					
Downsouth	Moderate: wetness.	Moderate: wetness.	Severe: slope.	Severe: erodes easily.	Slight: wetness.
337A:					
Creal	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
384A:					
Edwardsville	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
384B:					
Edwardsville	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
441B:					
Wakenda	Slight	Slight	Moderate: slope.	Slight	Slight.
470B2:					
Keller	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
470C:					
Keller	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Moderate: wetness.	Moderate: wetness.
470C2:					
Keller	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Moderate: wetness.	Moderate: wetness.
472C2:					
Baylis	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.
472D2:					
Baylis	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
472E2:					
Baylis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
477B:					
Winfield	Moderate: wetness.	Moderate: wetness.	Moderate: slope, wetness.	Slight	Slight.
477C2:					
Winfield	Moderate: wetness.	Moderate: wetness.	Severe: slope.	Slight	Slight.
477C3:					
Winfield	Moderate: wetness.	Moderate: wetness.	Severe: slope.	Slight	Slight.
515B2:					
Bunkum	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
515C2:					
Bunkum	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Moderate: wetness.	Moderate: wetness.
515C3:					
Bunkum	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: wetness.
515D2:					
Bunkum	Severe: wetness.	Moderate: percs slowly, slope, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: slope, wetness.
515D3:					
Bunkum	Severe: wetness.	Moderate: percs slowly, slope, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: slope, wetness.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
538B2:					
Emery	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
538C2:					
Emery	Severe: wetness.	Severe: wetness.	Severe: slope, wetness.	Severe: wetness, erodes easily.	Severe: wetness.
549D2:					
Marseilles	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope, depth to rock.
549D3:					
Marseilles	Moderate: slope, percs slowly.	Moderate: percs slowly, slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope, depth to rock.
549F:					
Marseilles	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
549G:					
Marseilles	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
559F:					
Lindley	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
559G:					
Lindley	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
606F:					
Goss	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty.
606G:					
Goss	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty.
629C2:					
Crider	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.
629D2:					
Crider	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
651C2:					
Keswick	Moderate: percs slowly, wetness.	Moderate: percs slowly, wetness.	Severe: slope.	Slight: slope.	Slight: wetness.
651C3:					
Keswick	Moderate: percs slowly, wetness.	Moderate: wetness.	Severe: slope.	Slight: slope.	Slight: wetness.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
651D2:					
Keswick	Moderate: percs slowly, slope, wetness.	Moderate: percs slowly, slope, wetness.	Severe: slope.	Moderate: slope.	Moderate: slope.
651D3:					
Keswick	Moderate: percs slowly, slope, wetness.	Moderate: slope, wetness.	Severe: slope.	Moderate: slope.	Moderate: slope.
651E2:					
Keswick	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
652C2:					
Passport	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Moderate: wetness.	Moderate: wetness.
652C3:					
Passport	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: wetness.
655C2:					
Ursa	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
655C3:					
Ursa	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
655D2:					
Ursa	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
655D3:					
Ursa	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
660C2:					
Coatsburg	Severe: percs slowly, wetness.	Severe: percs slowly, wetness.	Severe: percs slowly, slope, wetness.	Severe: wetness.	Severe: wetness.
671A:					
Biggsville	Slight	Slight	Slight	Slight	Slight.
671B:					
Biggsville	Slight	Slight	Moderate: slope.	Slight	Slight.
675B:					
Greenbush	Slight	Slight	Moderate: slope.	Slight	Slight.
675C2:					
Greenbush	Slight	Slight	Severe: slope.	Severe: erodes easily.	Slight.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
678A:					
Mannon	Slight	Slight	Slight	Slight	Slight.
678B:					
Mannon	Slight	Slight	Moderate: slope.	Slight	Slight.
785G:					
Lacrescent	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
801B:					
Orthents	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly, slope.	Severe: erodes easily.	Slight.
816B:					
Stookey	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
Timula	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
Orthents	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly, slope.	Severe: erodes easily.	Slight.
816D:					
Stookey	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Timula	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Orthents	Moderate: percs slowly, slope.	Moderate: percs slowly, slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
829B:					
Biggsville	Slight	Slight	Moderate: slope.	Slight	Slight.
Mannon	Slight	Slight	Moderate: slope.	Slight	Slight.
855A:					
Timewell	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
Ipava	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
855B:					
Timewell	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
Ipava	Severe: wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
856F:					
Stookey	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily, slope.	Severe: slope.
Timula	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily, slope.	Severe: slope.
856G:					
Stookey	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily, slope.	Severe: slope.
Timula	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily, slope.	Severe: slope.
864:					
Pits.					
871G:					
Lenzburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
1070L:					
Beaucoup	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
3226A:					
Wirt	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
3331A:					
Haymond	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
3333A:					
Wakeland	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding, wetness.
3368L:					
Raveenwash	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding.
3396A:					
Vesser	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding.
3451A:					
Lawson	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding.
3475A:					
Elsah	Severe: flooding.	Moderate: flooding, small stones.	Severe: flooding, small stones.	Moderate: flooding.	Severe: flooding.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
3634A:					
Blyton	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.
3877L:					
Blake	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding.
Slacwater	Severe: flooding, ponding.	Severe: ponding.	Severe: flooding, ponding.	Severe: ponding.	Severe: flooding, ponding.
8070A:					
Beaucoup	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
8073A:					
Ross	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
8077A:					
Huntsville	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
8092A:					
Sarpy	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: flooding, too sandy, droughty.
8162A:					
Gorham	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
8180A:					
Dupo	Severe: flooding, wetness.	Moderate: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Moderate: flooding, wetness.
8217A:					
Twomile	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
8284A:					
Tice	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: flooding, wetness.
8333A:					
Wakeland	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
8349B:					
Zumbro	Severe: flooding.	Slight	Moderate: flooding, slope.	Slight	Moderate: flooding.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
8396A:					
Vesser	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
8404A:					
Titus	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
8451A:					
Lawson	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: flooding, wetness.
8452A:					
Riley	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: flooding, wetness.
8634A:					
Blyton	Severe: flooding.	Moderate: wetness.	Moderate: flooding, wetness.	Moderate: wetness.	Moderate: flooding, wetness.
W:					
Water.					

Table 13.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
6B2:										
Fishhook	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
6C2:										
Fishhook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
6C3:										
Fishhook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
6D2:										
Fishhook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
6D3:										
Fishhook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7C2:										
Atlas	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7C3:										
Atlas	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8E2:										
Hickory	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
8F:										
Hickory	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
8G:										
Hickory	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
16A:										
Rushville	Poor	Fair	Poor	Fair	Fair	Good	Good	Poor	Fair	Good
17A:										
Keomah	Good	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair
17B:										
Keomah	Good	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair
37A:										
Worthen	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
37B:										
Worthen	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
50A:										
Virden	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
75A: Drury	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
75B: Drury	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
75C2: Drury	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
79B: Menfro	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
79C2: Menfro	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
79C3: Menfro	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
79D2: Menfro	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
79D3: Menfro	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
81A: Littleton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
86B: Osco	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
88B: Sparta	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
90A: Bethalto	Poor	Poor	Poor	Poor	Poor	Fair	Fair	Good	Good	Fair
90B: Bethalto	Poor	Poor	Poor	Poor	Poor	Fair	Poor	Good	Good	Poor
111A: Rubio	Good	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
175F: Lamont	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
175G: Lamont	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
216B: Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
216C2:										
Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
216C3:										
Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
216D2:										
Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
216D3:										
Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
257A:										
Clarksdale	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
257B:										
Clarksdale	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
264C2:										
El Dara	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
264D2:										
El Dara	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
264D3:										
El Dara	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
264E2:										
El Dara	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
264G:										
El Dara	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
267A:										
Caseyville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
267B:										
Caseyville	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
271C2:										
Timula	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
271D2:										
Timula	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
279B:										
Rozetta	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
279C2:										
Rozetta	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
279C3:										
Rozetta	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
283B:										
Downsouth	Fair	Fair	Fair	Poor	Fair	Poor	Poor	Good	Good	Poor
283C2:										
Downsouth	Fair	Fair	Fair	Poor	Fair	Poor	Poor	Good	Good	Poor
337A:										
Creal	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
384A:										
Edwardsville	Poor	Poor	Poor	Poor	Poor	Fair	Fair	Good	Poor	Fair
384B:										
Edwardsville	Poor	Poor	Poor	Poor	Poor	Fair	Poor	Good	Poor	Poor
441B:										
Wakenda	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
470B2:										
Keller	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
470C:										
Keller	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
470C2:										
Keller	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
472C2:										
Baylis	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
472D2:										
Baylis	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
472E2:										
Baylis	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
477B:										
Winfield	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
477C2:										
Winfield	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
477C3:										
Winfield	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
515B2:										
Bunkum	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
515C2:										
Bunkum	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
515C3:										
Bunkum	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
515D2:										
Bunkum	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
515D3:										
Bunkum	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
538B2:										
Emery	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
538C2:										
Emery	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
549D2:										
Marseilles	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
549D3:										
Marseilles	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
549F:										
Marseilles	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
549G:										
Marseilles	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
559F:										
Lindley	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
559G:										
Lindley	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
606F:										
Goss	Very poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
606G:										
Goss	Very poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
629C2:										
Crider	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
629D2:										
Crider	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
651C2:										
Keswick	Fair	Good	Fair	Good	Fair	Very poor	Poor	Fair	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
651C3: Keswick	Fair	Good	Fair	Good	Fair	Very poor	Poor	Fair	Good	Very poor
651D2: Keswick	Poor	Fair	Fair	Good	Fair	Very poor	Very poor	Fair	Good	Very poor
651D3: Keswick	Poor	Fair	Fair	Good	Fair	Very poor	Very poor	Fair	Good	Very poor
651E2: Keswick	Very poor	Poor	Fair	Good	Fair	Very poor	Very poor	Poor	Good	Very poor
652C2: Passport	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
652C3: Passport	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
655C2: Ursa	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
655C3: Ursa	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
655D2: Ursa	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
655D3: Ursa	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
660C2: Coatsburg	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
671A: Biggsville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
671B: Biggsville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
675B: Greenbush	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
675C2: Greenbush	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
678A:										
Mannon	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
678B:										
Mannon	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
785G:										
Lacrescent	Poor	Poor	Fair	Good	Good	Very poor	Very poor	Poor	Good	Very poor
801B:										
Orthents	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
816B:										
Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Timula	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Orthents	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
816D:										
Stookey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Timula	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Orthents	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
829B:										
Biggsville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Mannon	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
855A:										
Timewell	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Ipava	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
855B:										
Timewell	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
Ipava	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
856F:										
Stookey	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Timula	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
856G:										
Stookey	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
856G:										
Timula	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Very poor	Good	Very poor
864:										
Pits.										
871G:										
Lenzburg	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
1070L:										
Beaucoup	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
3226A:										
Wirt	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
3331A:										
Haymond	Good	Good	Fair	Good	Good	Poor	Poor	Good	Good	Poor
3333A:										
Wakeland	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3368L:										
Raveenwash	Poor	Fair	Fair	Poor	Poor	Good	Good	Good	Good	Good
3396A:										
Vesser	Good	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
3451A:										
Lawson	Good	Good	Fair	Good	Good	Fair	Fair	Good	Good	Fair
3475A:										
Elsah	Fair	Fair	Fair	Good	Fair	Poor	Poor	Fair	Good	Poor
3634A:										
Blyton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
3877L:										
Blake	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Slacwater	Poor	Fair	Fair	Poor	Poor	Good	Good	Good	Good	Good
8070A:										
Beaucoup	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
8073A:										
Ross	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8077A:										
Huntsville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
8092A:										
Sarpy	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
8162A:										
Gorham	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
8180A:										
Dupo	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8217A:										
Twomile	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
8284A:										
Tice	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
8333A:										
Wakeland	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8349B:										
Zumbro	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
8396A:										
Vesser	Good	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8404A:										
Titus	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
8451A:										
Lawson	Good	Good	Fair	Good	Good	Fair	Fair	Good	Good	Fair
8452A:										
Riley	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8634A:										
Blyton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
W:										
Water.										

Table 14.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
6B2:						
Fishhook--------	Severe: wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
6C2:						
Fishhook--------	Severe: wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
6C3:						
Fishhook--------	Severe: wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
6D2:						
Fishhook--------	Severe: wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: slope, wetness.	Severe: frost action, low strength.	Moderate: slope, wetness.
6D3:						
Fishhook--------	Severe: wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: slope, wetness.	Severe: frost action, low strength.	Moderate: slope, wetness.
7C2:						
Atlas-----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
7C3:						
Atlas-----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
8E2:						
Hickory---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
8F:						
Hickory---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
8G:						
Hickory---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
16A:						
Rushville-------	Severe: ponding.	Severe: shrink-swell, ponding.	Severe: shrink-swell, ponding.	Severe: shrink-swell, ponding.	Severe: low strength, shrink-swell, ponding.	Severe: ponding.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
17A:						
Keomah----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
17B:						
Keomah----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
37A:						
Worthen---------	Slight---------	Slight---------	Slight---------	Slight---------	Severe: frost action, low strength.	Slight.
37B:						
Worthen---------	Slight---------	Slight---------	Slight---------	Slight---------	Severe: frost action, low strength.	Slight.
50A:						
Virden----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
75A:						
Drury-----------	Slight---------	Slight---------	Slight---------	Slight---------	Severe: frost action, low strength.	Slight.
75B:						
Drury-----------	Slight---------	Slight---------	Slight---------	Slight---------	Severe: frost action, low strength.	Slight.
75C2:						
Drury-----------	Slight---------	Slight---------	Slight---------	Moderate: slope.	Severe: frost action, low strength.	Slight.
79B:						
Menfro----------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
79C2:						
Menfro----------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
79C3:						
Menfro----------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
79D2:						
Menfro----------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
79D3:						
Menfro----------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.
81A:						
Littleton-------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
86B:						
Osco------------	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
88B:						
Sparta----------	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
90A:						
Bethalto--------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength, wetness.	Severe: wetness.
90B:						
Bethalto--------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength, wetness.	Severe: wetness.
111A:						
Rubio-----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
175F:						
Lamont----------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
175G:						
Lamont----------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
216B:						
Stookey---------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
216C2:						
Stookey---------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
216C3:						
Stookey---------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
216D2:						
Stookey	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.
216D3:						
Stookey	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.
257A:						
Clarksdale	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
257B:						
Clarksdale	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
264C2:						
El Dara	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: slope, wetness.	Moderate: frost action, wetness.	Slight.
264D2:						
El Dara	Severe: wetness.	Moderate: slope, wetness.	Severe: wetness.	Severe: slope.	Moderate: frost action, slope, wetness.	Moderate: slope.
264D3:						
El Dara	Severe: wetness.	Moderate: slope, wetness.	Severe: wetness.	Severe: slope.	Moderate: frost action, slope, wetness.	Moderate: slope.
264E2:						
El Dara	Severe: slope, wetness.	Severe: slope.	Severe: slope, wetness.	Severe: slope.	Severe: slope.	Severe: slope.
264G:						
El Dara	Severe: slope, wetness.	Severe: slope.	Severe: slope, wetness.	Severe: slope.	Severe: slope.	Severe: slope.
267A:						
Caseyville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
267B:						
Caseyville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
271C2:						
Timula	Moderate: cutbanks cave.	Slight	Slight	Moderate: slope.	Severe: frost action.	Slight.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
271D2:						
Timula----------	Moderate: cutbanks cave, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
279B:						
Rozetta---------	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
279C2:						
Rozetta---------	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
279C3:						
Rozetta---------	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
283B:						
Downsouth-------	Severe: wetness.	Moderate: shrink-swell, wetness.	Severe: wetness.	Moderate: shrink-swell, wetness.	Moderate: frost action, low strength.	Slight.
283C2:						
Downsouth-------	Severe: wetness.	Moderate: shrink-swell, wetness.	Severe: wetness.	Moderate: shrink-swell, slope, wetness.	Moderate: frost action, low strength.	Slight.
337A:						
Creal-----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Severe: wetness.
384A:						
Edwardsville----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
384B:						
Edwardsville----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength.	Moderate: wetness.
441B:						
Wakenda---------	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
470B2:						
Keller----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell.	Moderate: wetness.
470C:						
Keller----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell.	Moderate: wetness.
470C2:						
Keller----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell.	Moderate: wetness.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
472C2:						
Baylis----------	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: frost action.	Slight.
472D2:						
Baylis----------	Moderate: slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
472E2:						
Baylis----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: frost action, slope.	Severe: slope.
477B:						
Winfield--------	Severe: wetness.	Moderate: shrink-swell, wetness.	Severe: wetness.	Moderate: shrink-swell, wetness.	Severe: frost action, low strength.	Slight.
477C2:						
Winfield--------	Severe: wetness.	Moderate: shrink-swell, wetness.	Severe: wetness.	Moderate: shrink-swell, slope, wetness.	Severe: frost action, low strength.	Slight.
477C3:						
Winfield--------	Severe: wetness.	Moderate: shrink-swell, wetness.	Severe: wetness.	Moderate: shrink-swell, slope, wetness.	Severe: frost action, low strength.	Slight.
515B2:						
Bunkum----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
515C2:						
Bunkum----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
515C3:						
Bunkum----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
515D2:						
Bunkum----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: slope, wetness.	Severe: low strength.	Moderate: slope, wetness.
515D3:						
Bunkum----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: slope, wetness.	Severe: low strength.	Moderate: slope, wetness.
538B2:						
Emery-----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength, wetness.	Severe: wetness.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
538C2:						
Emery-----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action, low strength, wetness.	Severe: wetness.
549D2:						
Marseilles------	Moderate: depth to rock, slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: frost action, low strength.	Moderate: depth to rock, slope.
549D3:						
Marseilles------	Moderate: depth to rock, slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength, frost action.	Moderate: depth to rock, slope.
549F:						
Marseilles------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
549G:						
Marseilles------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope, frost action.	Severe: slope.
559F:						
Lindley---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
559G:						
Lindley---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
606F:						
Goss------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty.
606G:						
Goss------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty.
629C2:						
Crider----------	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Severe: low strength.	Slight.
629D2:						
Crider----------	Moderate: slope, too clayey.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
651C2:						
Keswick---------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
651C3:						
Keswick	Severe: wetness.	Severe: shrink-swell.	Severe: wetness.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
651D2:						
Keswick	Severe: wetness.	Severe: shrink-swell.	Severe: wetness.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
651D3:						
Keswick	Severe: wetness.	Severe: shrink-swell.	Severe: wetness.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
651E2:						
Keswick	Severe: slope, wetness.	Severe: shrink-swell, slope.	Severe: slope, wetness.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell, slope.	Severe: slope.
652C2:						
Passport	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
652C3:						
Passport	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
655C2:						
Ursa	Moderate: too clayey, wetness.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
655C3:						
Ursa	Moderate: too clayey, wetness.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
655D2:						
Ursa	Moderate: slope, too clayey, wetness.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
655D3:						
Ursa	Moderate: slope, too clayey, wetness.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
660C2:						
Coatsburg	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: low strength, shrink-swell, wetness.	Severe: wetness.
671A:						
Biggsville	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Severe: frost action, low strength.	Slight.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
671B:						
Biggsville	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Severe: frost action, low strength.	Slight.
675B:						
Greenbush	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell.	Severe: frost action, low strength.	Slight.
675C2:						
Greenbush	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
678A:						
Mannon	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Severe: frost action, low strength.	Slight.
678B:						
Mannon	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Severe: frost action, low strength.	Slight.
785G:						
Lacrescent	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
801B:						
Orthents	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
816B:						
Stookey	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
Timula	Moderate: cutbanks cave.	Slight	Slight	Moderate: slope.	Severe: frost action.	Slight.
Orthents	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell, wetness.	Moderate: shrink-swell, slope.	Severe: frost action, low strength.	Slight.
816D:						
Stookey	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.
Timula	Moderate: cutbanks cave, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
Orthents	Moderate: slope, wetness.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope, wetness.	Severe: slope.	Severe: frost action, low strength.	Moderate: slope.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
829B:						
Biggsville------	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Severe: frost action, low strength.	Slight.
Mannon----------	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Severe: frost action, low strength.	Slight.
855A:						
Timewell--------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: frost action, low strength, shrink-swell.	Moderate: wetness.
Ipava-----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: frost action, low strength, shrink-swell.	Moderate: wetness.
855B:						
Timewell--------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: frost action, low strength, shrink-swell.	Moderate: wetness.
Ipava-----------	Severe: wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: shrink-swell, wetness.	Severe: frost action, low strength, shrink-swell.	Moderate: wetness.
856F:						
Stookey---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: frost action, low strength, slope.	Severe: slope.
Timula----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: frost action, slope.	Severe: slope.
856G:						
Stookey---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: frost action, low strength, slope.	Severe: slope.
Timula----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: frost action, slope.	Severe: slope.
864:						
Pits.						
871G:						
Lenzburg--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
1070L:						
Beaucoup--------	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, low strength, ponding.	Severe: ponding.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
3226A:						
Wirt------------	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
3331A:						
Haymond---------	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding, frost action.	Severe: flooding.
3333A:						
Wakeland--------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action, wetness.	Severe: flooding, wetness.
3368L:						
Raveenwash------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Severe: flooding.
3396A:						
Vesser----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, low strength, wetness.	Severe: flooding.
3451A:						
Lawson----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Severe: flooding.
3475A:						
Elsah-----------	Moderate: flooding, large stones.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
3634A:						
Blyton----------	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding, frost action.	Severe: flooding.
3877L:						
Blake-----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action, low strength.	Severe: flooding.
Slacwater-------	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, low strength, ponding.	Severe: flooding, ponding.
8070A:						
Beaucoup--------	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, low strength, ponding.	Severe: ponding.
8073A:						
Ross------------	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
8077A:						
Huntsville	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding, frost action, low strength.	Moderate: flooding.
8092A:						
Sarpy	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: droughty, flooding, too sandy.
8162A:						
Gorham	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, low strength, wetness.	Severe: wetness.
8180A:						
Dupo	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, shrink-swell, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Moderate: flooding, wetness.
8217A:						
Twomile	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action, wetness.	Severe: wetness.
8284A:						
Tice	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action, low strength.	Moderate: flooding, wetness.
8333A:						
Wakeland	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action, wetness.	Severe: wetness.
8349B:						
Zumbro	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
8396A:						
Vesser	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, low strength, wetness.	Severe: wetness.
8404A:						
Titus	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, shrink-swell.	Severe: ponding.
8451A:						
Lawson	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Moderate: flooding, wetness.

Table 14.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
8452A:						
Riley-----------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action, low strength.	Moderate: flooding, wetness.
8634A:						
Blyton----------	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding, frost action.	Moderate: flooding, wetness.
W:						
Water.						

Table 15.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
6B2:					
Fishhook--------	Severe: percs slowly, wetness.	Moderate: seepage, slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
6C2:					
Fishhook--------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
6C3:					
Fishhook--------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
6D2:					
Fishhook--------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
6D3:					
Fishhook--------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
7C2:					
Atlas-----------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
7C3:					
Atlas-----------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
8E2:					
Hickory---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
8F:					
Hickory---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
8G:					
Hickory---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
16A:					
Rushville-------	Severe: percs slowly, ponding.	Severe: ponding.	Severe: too clayey, ponding.	Severe: ponding.	Poor: hard to pack, too clayey, ponding.
17A:					
Keomah----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
17B:					
Keomah----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
37A:					
Worthen---------	Slight-----------	Moderate: seepage.	Slight-----------	Slight-----------	Good.
37B:					
Worthen---------	Slight-----------	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
50A:					
Virden----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
75A:					
Drury-----------	Moderate: percs slowly.	Moderate: seepage.	Slight-----------	Slight-----------	Good.
75B:					
Drury-----------	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
75C2:					
Drury-----------	Moderate: percs slowly.	Severe: slope.	Slight-----------	Slight-----------	Good.
79B:					
Menfro----------	Slight-----------	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----------	Fair: too clayey.
79C2:					
Menfro----------	Slight-----------	Severe: slope.	Moderate: too clayey.	Slight-----------	Fair: too clayey.
79C3:					
Menfro----------	Slight-----------	Severe: slope.	Moderate: too clayey.	Slight-----------	Fair: too clayey.
79D2:					
Menfro----------	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: slope, too clayey.
79D3:					
Menfro----------	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: slope, too clayey.
81A:					
Littleton-------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
86B:					
Osco------------	Moderate: wetness.	Moderate: slope, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
88B:					
Sparta----------	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
90A:					
Bethalto--------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
90B:					
Bethalto--------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
111A:					
Rubio-----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: hard to pack, wetness.
175F:					
Lamont----------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
175G:					
Lamont----------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
216B:					
Stookey---------	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
216C2:					
Stookey---------	Moderate: percs slowly.	Severe: slope.	Slight-----------	Slight-----------	Good.
216C3:					
Stookey---------	Moderate: percs slowly.	Severe: slope.	Slight-----------	Slight-----------	Good.
216D2:					
Stookey---------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
216D3:					
Stookey---------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
257A:					
Clarksdale------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
257B:					
Clarksdale------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
264C2:					
El Dara	Severe: wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: seepage.
264D2:					
El Dara	Severe: wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: wetness.	Poor: seepage.
264D3:					
El Dara	Severe: wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: wetness.	Poor: seepage, wetness.
264E2:					
El Dara	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Poor: seepage, slope.
264G:					
El Dara	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Poor: seepage, slope.
267A:					
Caseyville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
267B:					
Caseyville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
271C2:					
Timula	Moderate: percs slowly.	Severe: slope.	Slight	Slight	Good.
271D2:					
Timula	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
279B:					
Rozetta	Moderate: wetness.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
279C2:					
Rozetta	Moderate: wetness.	Severe: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
279C3:					
Rozetta	Moderate: wetness.	Severe: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
283B:					
Downsouth	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
283C2:					
Downsouth-------	Severe: wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
337A:					
Creal-----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness, too acid.	Severe: wetness.	Poor: wetness.
384A:					
Edwardsville----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
384B:					
Edwardsville----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
441B:					
Wakenda---------	Moderate: wetness.	Moderate: seepage, slope, wetness.	Moderate: too clayey.	Moderate: wetness.	Fair: too clayey.
470B2:					
Keller----------	Severe: percs slowly, wetness.	Moderate: seepage, slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
470C:					
Keller----------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
470C2:					
Keller----------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
472C2:					
Baylis----------	Moderate: percs slowly.	Severe: slope.	Severe: too clayey.	Slight-----------	Poor: small stones, too clayey.
472D2:					
Baylis----------	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: small stones, too clayey.
472E2:					
Baylis----------	Severe: slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: slope, small stones, too clayey.
477B:					
Winfield--------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
477C2:					
Winfield--------	Severe: wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
477C3:					
Winfield--------	Severe: wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
515B2:					
Bunkum----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
515C2:					
Bunkum----------	Severe: percs slowly, wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
515C3:					
Bunkum----------	Severe: percs slowly, wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
515D2:					
Bunkum----------	Severe: percs slowly, wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
515D3:					
Bunkum----------	Severe: percs slowly, wetness.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
538B2:					
Emery-----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: hard to pack.
538C2:					
Emery-----------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: hard to pack.
549D2:					
Marseilles------	Severe: percs slowly, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
549D3:					
Marseilles------	Severe: percs slowly, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
549F:					
Marseilles------	Severe: percs slowly, slope, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock, slope, too clayey.	Severe: slope, depth to rock.	Poor: depth to rock, too clayey, hard to pack.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
549G:					
Marseilles	Severe: percs slowly, slope, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock, slope, too clayey.	Severe: slope, depth to rock.	Poor: depth to rock, too clayey, hard to pack.
559F:					
Lindley	Severe: percs slowly, slope, wetness.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
559G:					
Lindley	Severe: percs slowly, slope, wetness.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
606F:					
Goss	Severe: slope.	Severe: seepage, slope.	Severe: large stones, slope, too clayey.	Severe: slope.	Poor: slope, small stones, too clayey.
606G:					
Goss	Severe: slope.	Severe: seepage, slope.	Severe: large stones, slope, too clayey.	Severe: slope.	Poor: slope, small stones, too clayey.
629C2:					
Crider	Slight	Severe: slope.	Moderate: too clayey.	Slight	Fair: too clayey.
629D2:					
Crider	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: slope, too clayey.
651C2:					
Keswick	Severe: percs slowly, wetness.	Severe: slope.	Moderate: slope, wetness.	Moderate: wetness.	Fair: too clayey, wetness.
651C3:					
Keswick	Severe: percs slowly, wetness.	Severe: slope.	Moderate: slope, wetness.	Moderate: wetness.	Fair: too clayey, wetness.
651D2:					
Keswick	Severe: percs slowly, wetness.	Severe: slope.	Severe: slope.	Moderate: slope, wetness.	Fair: slope, too clayey, wetness.
651D3:					
Keswick	Severe: percs slowly, wetness.	Severe: slope.	Severe: slope.	Moderate: slope, wetness.	Fair: slope, too clayey, wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
651E2:					
Keswick---------	Severe: percs slowly, slope, wetness.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
652C2:					
Passport--------	Severe: percs slowly, wetness.	Severe: slope.	Severe: wetness.	Severe: wetness.	Poor: thin layer, wetness.
652C3:					
Passport--------	Severe: percs slowly, wetness.	Severe: slope.	Severe: wetness.	Severe: wetness.	Poor: thin layer, wetness.
655C2:					
Ursa------------	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight-----------	Poor: hard to pack, too clayey.
655C3:					
Ursa------------	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight-----------	Poor: hard to pack, too clayey.
655D2:					
Ursa------------	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: hard to pack, too clayey.
655D3:					
Ursa------------	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: hard to pack, too clayey.
660C2:					
Coatsburg-------	Severe: percs slowly, wetness.	Severe: slope.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey.
671A:					
Biggsville------	Moderate: wetness.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Good.
671B:					
Biggsville------	Moderate: wetness.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Good.
675B:					
Greenbush-------	Moderate: wetness.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
675C2:					
Greenbush-------	Moderate: wetness.	Severe: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
678A:					
Mannon----------	Moderate: wetness.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Good.
678B:					
Mannon----------	Moderate: wetness.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Good.
785G:					
Lacrescent------	Severe: slope.	Severe: seepage, slope.	Severe: large stones, seepage, slope.	Severe: seepage, slope.	Poor: large stones, slope.
801B:					
Orthents--------	Severe: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Slight-----------	Fair: wetness.
816B:					
Stookey---------	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
Timula----------	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
Orthents--------	Severe: percs slowly, wetness.	Severe: wetness.	Moderate: wetness.	Slight-----------	Fair: wetness.
816D:					
Stookey---------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Timula----------	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Orthents--------	Severe: percs slowly, wetness.	Severe: slope, wetness.	Moderate: slope, wetness.	Moderate: slope.	Fair: slope, wetness.
829B:					
Biggsville------	Moderate: wetness.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Good.
Mannon----------	Moderate: wetness.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Good.
855A:					
Timewell--------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
855A:					
Ipava-----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
855B:					
Timewell--------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
Ipava-----------	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: hard to pack, too clayey, wetness.
856F:					
Stookey---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Timula----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
856G:					
Stookey---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Timula----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
864:					
Pits.					
871G:					
Lenzburg--------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
1070L:					
Beaucoup--------	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Poor: ponding.
3226A:					
Wirt------------	Severe: flooding.	Severe: flooding, seepage.	Severe: flooding, seepage.	Severe: flooding, seepage.	Good.
3331A:					
Haymond---------	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
3333A:					
Wakeland--------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
3368L:					
Raveenwash------	Severe: flooding, wetness, poor filter.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
3396A:					
Vesser	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
3451A:					
Lawson	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
3475A:					
Elsah	Severe: flooding, poor filter.	Severe: flooding, seepage.	Severe: flooding, large stones, seepage.	Severe: flooding, seepage.	Poor: small stones.
3634A:					
Blyton	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
3877L:					
Blake	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Slacwater	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Poor: ponding.
8070A:					
Beaucoup	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Poor: ponding.
8073A:					
Ross	Severe: flooding.	Severe: flooding, seepage.	Severe: flooding, seepage.	Severe: flooding, seepage.	Good.
8077A:					
Huntsville	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
8092A:					
Sarpy	Severe: flooding, poor filter.	Severe: flooding, seepage.	Severe: flooding, seepage, too sandy.	Severe: flooding, seepage.	Poor: seepage, too sandy.
8162A:					
Gorham	Severe: flooding, percs slowly, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
8180A:					
Dupo	Severe: flooding, percs slowly, wetness.	Severe: flooding.	Severe: flooding, too clayey, wetness.	Severe: flooding, wetness.	Poor: hard to pack, too clayey, wetness.

Table 15.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
8217A:					
Twomile	Severe: flooding, percs slowly, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
8284A:					
Tice	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
8333A:					
Wakeland	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
8349B:					
Zumbro	Severe: flooding, poor filter.	Severe: flooding, seepage.	Severe: flooding, seepage.	Severe: flooding, seepage.	Fair: thin layer, too sandy.
8396A:					
Vesser	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
8404A:					
Titus	Severe: flooding, percs slowly, ponding.	Severe: flooding, ponding.	Severe: flooding, too clayey, ponding.	Severe: flooding, ponding.	Poor: hard to pack, too clayey, ponding.
8451A:					
Lawson	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
8452A:					
Riley	Severe: flooding, wetness, poor filter.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
8634A:					
Blyton	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
W:					
Water.					

Table 16.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
6B2:				
Fishhook	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer, too clayey.
6C2:				
Fishhook	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer, too clayey.
6C3:				
Fishhook	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer, too clayey.
6D2:				
Fishhook	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, thin layer, too clayey.
6D3:				
Fishhook	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, thin layer, too clayey.
7C2:				
Atlas	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
7C3:				
Atlas	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
8E2:				
Hickory	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
8F:				
Hickory	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
8G:				
Hickory	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
16A:				
Rushville	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
17A:				
Keomah	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
17B:				
Keomah	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
37A:				
Worthen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
37B:				
Worthen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
50A:				
Virden	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
75A:				
Drury	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
75B:				
Drury	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
75C2:				
Drury	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
79B:				
Menfro	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
79C2:				
Menfro	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
79C3:				
Menfro	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
79D2:				
Menfro	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
79D3:				
Menfro	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
81A:				
Littleton	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
86B:				
Osco	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
88B:				
Sparta	Good	Probable	Improbable: too sandy.	Poor: too sandy.
90A:				
Bethalto	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
90B:				
Bethalto	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
111A:				
Rubio	Poor: low strength, shrink-swell, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
175F:				
Lamont	Poor: slope.	Probable	Improbable: too sandy.	Poor: slope.
175G:				
Lamont	Poor: slope.	Probable	Improbable: too sandy.	Poor: slope.
216B:				
Stookey	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Good.
216C2:				
Stookey	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Good.
216C3:				
Stookey	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Good.
216D2:				
Stookey	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
216D3:				
Stookey	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
257A:				
Clarksdale	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
257B:				
Clarksdale	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
264C2:				
El Dara	Fair: wetness.	Probable	Improbable: too sandy.	Fair: thin layer, too clayey.
264D2:				
El Dara	Fair: wetness.	Probable	Improbable: too sandy.	Fair: slope, thin layer, too clayey.
264D3:				
El Dara	Fair: wetness.	Probable	Improbable: too sandy.	Fair: slope, too clayey.
264E2:				
El Dara	Fair: slope, wetness.	Probable	Improbable: too sandy.	Poor: slope.
264G:				
El Dara	Poor: slope.	Probable	Improbable: too sandy.	Poor: slope.
267A:				
Caseyville	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
267B:				
Caseyville	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
271C2:				
Timula	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
271D2:				
Timula	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
279B:				
Rozetta	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
279C2:				
Rozetta	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
279C3:				
Rozetta	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
283B:				
Downsouth	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
283C2:				
Downsouth	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
337A:				
Creal	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
384A:				
Edwardsville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
384B:				
Edwardsville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
441B:				
Wakenda	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
470B2:				
Keller	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
470C:				
Keller	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
470C2:				
Keller	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
472C2:				
Baylis	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones.
472D2:				
Baylis	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones.
472E2:				
Baylis	Fair: low strength, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, slope, small stones.
477B:				
Winfield	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
477C2:				
Winfield	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
477C3:				
Winfield	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
515B2:				
Bunkum	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
515C2:				
Bunkum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
515C3:				
Bunkum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
515D2:				
Bunkum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
515D3:				
Bunkum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
538B2:				
Emery	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
538C2:				
Emery	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
549D2:				
Marseilles	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
549D3:				
Marseilles	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
549F:				
Marseilles	Poor: depth to rock, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too clayey.
549G:				
Marseilles	Poor: depth to rock, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too clayey.
559F:				
Lindley	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
559G:				
Lindley	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
606F:				
Goss	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones, too clayey.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
606G:				
Goss	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones, too clayey.
629C2:				
Crider	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
629D2:				
Crider	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
651C2:				
Keswick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
651C3:				
Keswick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
651D2:				
Keswick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
651D3:				
Keswick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
651E2:				
Keswick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too clayey.
652C2:				
Passport	Fair: shrink-swell, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, too clayey.
652C3:				
Passport	Fair: shrink-swell, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, too clayey.
655C2:				
Ursa	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
655C3:				
Ursa	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
655D2:				
Ursa	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
655D3:				
Ursa	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
660C2:				
Coatsburg----------	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
671A:				
Biggsville---------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
671B:				
Biggsville---------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
675B:				
Greenbush----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
675C2:				
Greenbush----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
678A:				
Mannon-------------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
678B:				
Mannon-------------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
785G:				
Lacrescent---------	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, large stones, slope.
801B:				
Orthents-----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
816B:				
Stookey------------	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Good.
Timula-------------	Good---------------	Improbable: excess fines.	Improbable: excess fines.	Good.
Orthents-----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
816D:				
Stookey------------	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Timula-------------	Good---------------	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Orthents-----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
829B:				
Biggsville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Mannon	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
855A:				
Timewell	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Ipava	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
855B:				
Timewell	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Ipava	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
856F:				
Stookey	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Timula	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
856G:				
Stookey	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Timula	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
864:				
Pits.				
871G:				
Lenzburg	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, slope, small stones.
1070L:				
Beaucoup	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
3226A:				
Wirt	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
3331A:				
Haymond	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
3333A:				
Wakeland	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
3368L:				
Raveenwash	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, too sandy.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
3396A:				
Vesser	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
3451A:				
Lawson	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
3475A:				
Elsah	Fair: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, small stones.
3634A:				
Blyton	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
3877L:				
Blake	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Slacwater	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
8070A:				
Beaucoup	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
8073A:				
Ross	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
8077A:				
Huntsville	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
8092A:				
Sarpy	Good	Probable	Improbable: too sandy.	Poor: too sandy.
8162A:				
Gorham	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too clayey, wetness.
8180A:				
Dupo	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Good.
8217A:				
Twomile	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
8284A:				
Tice	Fair: low strength, shrink-swell, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

Table 16.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
8333A:				
Wakeland	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
8349B:				
Zumbro	Good	Probable	Improbable: too sandy.	Fair: too sandy.
8396A:				
Vesser	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
8404A:				
Titus	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
8451A:				
Lawson	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
8452A:				
Riley	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too clayey.
8634A:				
Blyton	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
W:				
Water.				

Table 17.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
6B2:							
Fishhook	Moderate: seepage, slope.	Moderate: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
6C2:							
Fishhook	Moderate: seepage, slope.	Moderate: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
6C3:							
Fishhook	Moderate: seepage, slope.	Moderate: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
6D2:							
Fishhook	Severe: slope.	Moderate: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, slope, wetness.	Erodes easily, slope, wetness.
6D3:							
Fishhook	Severe: slope.	Moderate: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, slope, wetness.	Erodes easily, slope, wetness.
7C2:							
Atlas	Moderate: slope.	Severe: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Droughty, slope, wetness.	Wetness	Wetness.
7C3:							
Atlas	Moderate: slope.	Severe: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Droughty, slope, wetness.	Wetness	Wetness.
8E2:							
Hickory	Severe: slope.	Moderate: thin layer.	Severe: no water.	Deep to water	Slope	Slope	Slope.
8F:							
Hickory	Severe: slope.	Moderate: thin layer.	Severe: no water.	Deep to water	Slope	Slope	Slope. .

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
8G: Hickory------------	Severe: slope.	Moderate: thin layer.	Severe: no water.	Deep to water	Slope---------	Slope---------	Slope.
16A: Rushville----------	Slight--------	Severe: ponding, thin layer.	Severe: no water.	Frost action, percs slowly, ponding.	Erodes easily, percs slowly, ponding.	Erodes easily, percs slowly, ponding.	Erodes easily, percs slowly, wetness.
17A: Keomah-------------	Slight--------	Severe: wetness.	Severe: no water, slow refill.	Frost action, percs slowly.	Percs slowly, wetness.	Erodes easily, wetness.	Erodes easily, percs slowly, wetness.
17B: Keomah-------------	Moderate: slope.	Severe: wetness.	Severe: no water, slow refill.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, percs slowly, wetness.
37A: Worthen------------	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable-----	Erodes easily	Erodes easily.
37B: Worthen------------	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope---------	Erodes easily	Erodes easily.
50A: Virden-------------	Slight--------	Severe: wetness.	Severe: slow refill.	Frost action	Wetness-------	Erodes easily, wetness.	Erodes easily, wetness.
75A: Drury--------------	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
75B: Drury--------------	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
75C2: Drury--------------	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
79B: Menfro	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
79C2: Menfro	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
79C3: Menfro	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
79D2: Menfro	Severe: slope.	Slight	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
79D3: Menfro	Severe: slope.	Slight	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
81A: Littleton	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Frost action	Wetness	Erodes easily, wetness.	Erodes easily, wetness.
86B: Osco	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water, frost action, slope.	Slope	Erodes easily	Erodes easily.
88B: Sparta	Severe: seepage.	Severe: piping, seepage.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Soil blowing, too sandy.	Droughty.
90A: Bethalto	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Frost action	Erodes easily, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
90B: Bethalto	Moderate: seepage, slope.	Severe: wetness.	Moderate: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
111A:							
Rubio	Slight	Severe: wetness.	Severe: no water.	Frost action, percs slowly.	Erodes easily, percs slowly, wetness.	Erodes easily, wetness.	Erodes easily, percs slowly, wetness.
175F:							
Lamont	Severe: seepage, slope.	Moderate: thin layer.	Severe: no water.	Deep to water	Slope, soil blowing.	Slope, soil blowing.	Slope.
175G:							
Lamont	Severe: seepage, slope.	Moderate: thin layer.	Severe: no water.	Deep to water	Slope, soil blowing.	Slope, soil blowing.	Slope.
216B:							
Stookey	Moderate: seepage, slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
216C2:							
Stookey	Moderate: seepage, slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
216C3:							
Stookey	Moderate: seepage, slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
216D2:							
Stookey	Severe: slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
216D3:							
Stookey	Severe: slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
257A:							
Clarksdale	Slight	Severe: wetness.	Severe: slow refill.	Frost action	Erodes easily, wetness.	Erodes easily, wetness.	Erodes easily, wetness.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
257B: Clarksdale	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
264C2: El Dara	Moderate: seepage, slope.	Severe: piping, seepage.	Severe: cutbanks cave.	Slope	Slope, wetness.	Wetness	Rooting depth.
264D2: El Dara	Severe: slope.	Severe: piping, seepage.	Severe: cutbanks cave.	Slope	Slope, wetness.	Slope, wetness.	Rooting depth, slope.
264D3: El Dara	Severe: slope.	Severe: piping, seepage.	Severe: cutbanks cave.	Slope	Slope, soil blowing, wetness.	Slope, soil blowing, wetness.	Slope.
264E2: El Dara	Severe: slope.	Severe: piping, seepage.	Severe: cutbanks cave.	Slope	Slope, soil blowing, wetness.	Slope, soil blowing, wetness.	Rooting depth, slope.
264G: El Dara	Severe: slope.	Severe: piping, seepage.	Severe: cutbanks cave.	Slope	Slope, soil blowing, wetness.	Slope, soil blowing, wetness.	Rooting depth, slope.
267A: Caseyville	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Frost action	Erodes easily, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
267B: Caseyville	Moderate: seepage, slope.	Severe: wetness.	Moderate: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
271C2: Timula	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
271D2: Timula	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
279B:							
Rozetta	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water, frost action, slope.	Erodes easily, slope.	Erodes easily	Erodes easily.
279C2:							
Rozetta	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water, frost action, slope.	Erodes easily, slope.	Erodes easily	Erodes easily.
279C3:							
Rozetta	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water, frost action, slope.	Erodes easily, slope.	Erodes easily	Erodes easily.
283B:							
Downsouth	Moderate: seepage, slope.	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily.
283C2:							
Downsouth	Moderate: seepage, slope.	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily.
337A:							
Creal	Slight	Severe: thin layer, wetness.	Severe: slow refill.	Frost action, too acid.	Erodes easily, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
384A:							
Edwardsville	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Frost action	Wetness	Erodes easily, wetness.	Erodes easily, wetness.
384B:							
Edwardsville	Moderate: seepage, slope.	Severe: piping, wetness.	Moderate: slow refill.	Frost action, slope.	Slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
441B: Wakenda	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Slope	Erodes easily	Erodes easily.
470B2: Keller	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
470C: Keller	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
470C2: Keller	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
472C2: Baylis	Moderate: seepage, slope.	Moderate: large stones.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, large stones.	Erodes easily, large stones.
472D2: Baylis	Severe: slope.	Moderate: large stones.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, large stones, slope.	Erodes easily, large stones, slope.
472E2: Baylis	Severe: slope.	Moderate: large stones.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, large stones, slope.	Erodes easily, large stones, slope.
477B: Winfield	Moderate: seepage, slope.	Moderate: thin layer, wetness.	Severe: no water.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily.
477C2: Winfield	Moderate: seepage, slope.	Moderate: thin layer, wetness.	Severe: no water.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
477C3:							
Winfield-----------	Moderate: seepage, slope.	Moderate: thin layer, wetness.	Severe: no water.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily.
515B2:							
Bunkum-------------	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
515C2:							
Bunkum-------------	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
515C3:							
Bunkum-------------	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
515D2:							
Bunkum-------------	Severe: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, slope, wetness.	Erodes easily, slope, wetness.
515D3:							
Bunkum-------------	Severe: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Erodes easily, slope, wetness.	Erodes easily, slope, wetness.	Erodes easily, slope, wetness.
538B2:							
Emery--------------	Moderate: seepage, slope.	Severe: wetness.	Moderate: slow refill.	Frost action, slope.	Slope, wetness.	Erodes easily, wetness.	Erodes easily.
538C2:							
Emery--------------	Moderate: seepage, slope.	Severe: wetness.	Moderate: slow refill.	Frost action, slope.	Erodes easily, wetness, slope.	Erodes easily, wetness.	Erodes easily.
549D2:							
Marseilles---------	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, percs slowly, slope.	Depth to rock, erodes easily, slope.	Depth to rock, erodes easily, slope.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
549D3:							
Marseilles---------	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, percs slowly, slope.	Depth to rock, erodes easily, slope.	Depth to rock, erodes easily, slope.
549F:							
Marseilles---------	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, percs slowly, slope.	Depth to rock, erodes easily, slope.	Depth to rock, erodes easily, slope.
549G:							
Marseilles---------	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, percs slowly, slope.	Depth to rock, erodes easily, slope.	Depth to rock, erodes easily, slope.
559F:							
Lindley------------	Severe: slope.	Moderate: piping, wetness.	Severe: no water.	Slope---------	Slope, wetness.	Slope, wetness.	Slope.
559G:							
Lindley------------	Severe: slope.	Moderate: piping, wetness.	Severe: no water.	Slope---------	Slope, wetness.	Slope---------	Slope.
606F:							
Goss---------------	Severe: slope.	Severe: large stones.	Severe: no water.	Deep to water	Droughty, large stones, slope.	Large stones, slope.	Large stones, slope.
606G:							
Goss---------------	Severe: slope.	Severe: large stones.	Severe: no water.	Deep to water	Droughty, large stones, slope.	Large stones, slope.	Large stones, slope.
629C2:							
Crider-------------	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
629D2:							
Crider-------------	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Slope, erodes easily.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
651C2:							
Keswick	Moderate: slope.	Moderate: wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Wetness	Favorable.
651C3:							
Keswick	Moderate: slope.	Moderate: wetness.	Severe: no water.	Frost action, percs slowly, slope.	Slope, wetness.	Wetness	Favorable.
651D2:							
Keswick	Severe: slope.	Moderate: wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Slope, wetness.	Slope.
651D3:							
Keswick	Severe: slope.	Moderate: wetness.	Severe: no water.	Frost action, percs slowly, slope.	Slope, wetness.	Slope, wetness.	Slope.
651E2:							
Keswick	Severe: slope.	Moderate: wetness.	Severe: no water.	Frost action, percs slowly, slope.	Percs slowly, slope, wetness.	Slope, wetness.	Slope.
652C2:							
Passport	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
652C3:							
Passport	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Percs slowly, slope.	Percs slowly, slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
655C2:							
Ursa	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Percs slowly	Percs slowly.
655C3:							
Ursa	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Percs slowly	Percs slowly.
655D2:							
Ursa	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Percs slowly, slope.	Percs slowly, slope.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
655D3:							
Ursa----------------	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Percs slowly, slope.	Percs slowly, slope.
660C2:							
Coatsburg----------	Moderate: slope.	Severe: hard to pack, wetness.	Severe: no water.	Frost action, percs slowly, slope.	Slope, wetness.	Wetness-------	Wetness.
671A:							
Biggsville---------	Moderate: seepage.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water	Favorable-----	Erodes easily	Erodes easily.
671B:							
Biggsville---------	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope---------	Erodes easily	Erodes easily.
675B:							
Greenbush----------	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water, frost action, slope.	Slope---------	Erodes easily	Erodes easily.
675C2:							
Greenbush----------	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water, frost action, slope.	Erodes easily, slope.	Erodes easily	Erodes easily.
678A:							
Mannon-------------	Moderate: seepage.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
678B:							
Mannon-------------	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
785G:							
Lacrescent	Severe: seepage, slope.	Severe: large stones, piping, seepage.	Severe: no water.	Deep to water	Droughty, large stones, slope.	Erodes easily, large stones, slope.	Large stones, slope, erodes easily.
801B:							
Orthents	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
816B:							
Stookey	Moderate: seepage, slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
Timula	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
Orthents	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
816D:							
Stookey	Severe: slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
Timula	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
Orthents	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
829B:							
Biggsville	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope	Erodes easily	Erodes easily.
Mannon	Moderate: seepage, slope.	Moderate: piping.	Moderate: deep to water, slow refill.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
855A:							
Timewell-----------	Slight--------	Severe: wetness.	Severe: slow refill.	Frost action	Wetness-------	Erodes easily, wetness.	Erodes easily, wetness.
Ipava--------------	Slight--------	Severe: wetness.	Severe: slow refill.	Frost action	Wetness-------	Erodes easily, wetness.	Erodes easily, wetness.
855B:							
Timewell-----------	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
Ipava--------------	Moderate: slope.	Severe: wetness.	Severe: slow refill.	Frost action, slope.	Slope, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
856F:							
Stookey------------	Severe: slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
Timula-------------	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
856G:							
Stookey------------	Severe: slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
Timula-------------	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily, slope.	Erodes easily, slope.
864: Pits.							
871G:							
Lenzburg-----------	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water	Slope---------	Erodes easily, slope.	Erodes easily, slope.
1070L:							
Beaucoup-----------	Moderate: seepage.	Severe: ponding.	Moderate: slow refill.	Flooding, frost action, ponding.	Flooding, ponding.	Ponding-------	Wetness.
3226A:							
Wirt---------------	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, flooding.	Erodes easily	Erodes easily.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
3331A:							
Haymond	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, flooding.	Erodes easily	Erodes easily.
3333A:							
Wakeland	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding, frost action.	Erodes easily, flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
3368L:							
Raveenwash	Severe: seepage.	Severe: piping, seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave, flooding, frost action.	Flooding, wetness.	Erodes easily, too sandy, wetness.	Erodes easily, wetness.
3396A:							
Vesser	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding, frost action.	Flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
3451A:							
Lawson	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding, frost action.	Flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
3475A:							
Elsah	Severe: seepage.	Severe: large stones, piping.	Severe: no water.	Deep to water	Droughty, large stones.	Erodes easily, large stones.	Large stones, erodes easily, droughty.
3634A:							
Blyton	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding, frost action.	Erodes easily, flooding, wetness.	Erodes easily, wetness.	Erodes easily.
3877L:							
Blake	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding, frost action.	Flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
Slacwater	Moderate: seepage.	Severe: ponding.	Moderate: slow refill.	Flooding, frost action, ponding.	Flooding, ponding.	Erodes easily, ponding.	Erodes easily, wetness.
8070A:							
Beaucoup	Moderate: seepage.	Severe: ponding.	Moderate: slow refill.	Flooding, frost action, ponding.	Flooding, ponding.	Ponding	Wetness.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
8073A:							
Ross	Severe: seepage.	Severe: piping.	Moderate: no water.	Deep to water	Flooding	Favorable	Favorable.
8077A:							
Huntsville	Moderate: seepage.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Flooding	Favorable	Favorable.
8092A:							
Sarpy	Severe: seepage.	Severe: piping, seepage.	Severe: no water.	Deep to water	Droughty, fast intake.	Soil blowing, too sandy.	Droughty.
8162A:							
Gorham	Severe: seepage.	Severe: piping, seepage, wetness.	Severe: cutbanks cave, slow refill.	Flooding, frost action.	Wetness	Too sandy, wetness.	Rooting depth, wetness.
8180A:							
Dupo	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Flooding, frost action, percs slowly.	Erodes easily, percs slowly, wetness.	Erodes easily, percs slowly, wetness.	Erodes easily, percs slowly, wetness.
8217A:							
Twomile	Moderate: seepage.	Severe: wetness.	Severe: no water.	Flooding, frost action, percs slowly.	Erodes easily, percs slowly, wetness.	Erodes easily, percs slowly, wetness.	Erodes easily, percs slowly, wetness.
8284A:							
Tice	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding, frost action.	Wetness	Wetness	Wetness.
8333A:							
Wakeland	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding, frost action.	Erodes easily, flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
8349B:							
Zumbro	Severe: seepage.	Severe: piping, seepage.	Severe: no water.	Deep to water	Slope, soil blowing.	Soil blowing, too sandy.	Favorable.
8396A:							
Vesser	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding, frost action.	Flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.

Table 17.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
8404A:							
Titus	Slight	Severe: ponding.	Severe: slow refill.	Flooding, percs slowly, ponding.	Percs slowly, ponding.	Percs slowly, ponding.	Percs slowly, rooting depth, wetness.
8451A:							
Lawson	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding, frost action.	Flooding, wetness.	Erodes easily, wetness.	Erodes easily, wetness.
8452A:							
Riley	Severe: seepage.	Severe: piping, seepage, wetness.	Severe: cutbanks cave.	Flooding, frost action.	Wetness	Too sandy, wetness.	Favorable.
8634A:							
Blyton	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding, frost action.	Erodes easily, flooding, wetness.	Erodes easily, wetness.	Erodes easily.
W:							
Water.							

Table 18.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
6B2:												
Fishhook--------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	7-25	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	25-49	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	49-80	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
6C2:												
Fishhook--------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	5-22	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	22-55	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	55-80	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
6C3:												
Fishhook--------	0-3	Silty clay loam	ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-20
	3-27	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	27-68	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	68-82	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
6D2:												
Fishhook--------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	5-22	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	22-68	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	68-82	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
6D3:												
Fishhook--------	0-3	Silty clay loam	ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-20
	3-27	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	27-68	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	68-82	Clay loam, clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
7C2:												
Atlas-----------	0-13	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	75-95	25-35	5-15
	13-37	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	37-61	Silty clay, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	61-80	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-98	90-98	65-95	35-55	20-30
7C3:												
Atlas-----------	0-5	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	75-100	40-60	25-40
	5-20	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	20-43	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	43-80	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-98	90-98	65-95	35-55	20-30
8E2:												
Hickory---------	0-10	Loam	CL	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	8-15
	10-53	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	53-58	Sandy loam, loam, gravelly clay loam	CL-ML, CL, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Sandy loam, loam, gravelly clay loam	CL-ML, CL, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8F:												
Hickory---------	0-12	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-53	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	53-58	Sandy loam, loam, gravelly clay loam	CL, SC-SM, CL-ML, SC	A-4, A-2, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Loam, sandy loam, gravelly clay loam	CL-ML, CL, SC, SC-SM	A-4, A-2, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
8G:												
Hickory---------	0-4	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	4-12	Loam			0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-53	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	53-58	Loam, gravelly clay loam	CL, CL-ML, SC-SM, SC	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Loam, sandy loam, gravelly clay loam	CL-ML, CL, SC, SC-SM	A-4, A-2, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
16A:												
Rushville-------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	NP-15
	7-13	Silt loam, silt	CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	95-100	20-40	NP-15
	13-32	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	95-100	45-60	20-35
	32-50	Silty clay loam, silty clay	CH, ML, CL, MH	A-7-5, A-7-6	0	0	100	100	95-100	95-100	45-60	15-30
	50-80	Silt loam, silty clay loam	CL	A-4, A-7-6, A-6	0	0	100	100	95-100	90-100	30-45	8-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
17A:												
Keomah----------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	11-18	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	4-15
	18-33	Silty clay, silty clay loam	CH	A-7	0	0	100	100	100	95-100	45-60	30-45
	33-80	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	15-30
17B:												
Keomah----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	4-15
	11-31	Silty clay, silty clay loam	CH	A-7	0	0	100	100	100	95-100	45-60	30-45
	31-80	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-50	15-30
37A:												
Worthen---------	0-29	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	7-21
	29-64	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	7-21
	64-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	7-21
37B:												
Worthen---------	0-24	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	7-21
	24-56	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	7-21
	56-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	7-21
50A:												
Virden----------	0-16	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	30-50	10-25
	16-49	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	95-100	40-60	20-40
	49-60	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-50	10-25
75A:												
Drury-----------	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	20-35	NP-15
	13-50	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	8-15
	50-80	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	20-30	5-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
75B:												
Drury-----------	0-13	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	20-35	NP-15
	13-50	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	8-15
	50-80	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	20-30	5-15
75C2:												
Drury-----------	0-6	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	95-100	95-100	90-100	20-35	NP-15
	6-31	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	8-15
	31-80	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	20-30	5-15
79B:												
Menfro----------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-35	11-20
	8-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	11-20
	14-40	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	40-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
79C2:												
Menfro----------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-35	11-20
	8-55	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	55-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
79C3:												
Menfro----------	0-4	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	11-20
	4-55	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	55-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
79D2:												
Menfro----------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-35	11-20
	8-55	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	55-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
79D3:												
Menfro----------	0-4	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	11-20
	4-55	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	55-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
81A:												
Littleton-------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	7-20
	9-32	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	7-20
	32-60	Silt loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	80-100	20-45	5-20
86B:												
Osco------------	0-12	Silt loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	12-36	Silty clay loam, silt loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	40-50	15-25
	36-60	Silt loam, silty clay loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
88B:												
Sparta----------	0-23	Loamy sand	SM	A-2, A-4	0	0	85-100	85-100	50-95	15-50	0-14	NP
	23-34	Loamy sand, fine sand, sand	SM, SP-SM	A-2, A-4, A-3	0	0	85-100	85-100	50-95	5-50	0-14	NP
	34-60	Sand, fine sand	SP, SM, SP-SM	A-2, A-3	0	0	85-100	85-100	50-95	2-30	0-14	NP
90A:												
Bethalto--------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	92-100	30-35	10-15
	8-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	92-100	20-35	5-15
	14-63	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	98-100	95-100	30-45	10-20
	63-80	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-35	10-15
90B:												
Bethalto--------	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	92-100	30-35	10-15
	7-12	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	92-100	20-35	5-15
	12-63	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	98-100	95-100	30-45	10-20
	63-80	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-35	10-15
111A:												
Rubio-----------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	5-15
	9-16	Silt loam	CL-ML, CL, ML	A-4	0	0	100	100	100	95-100	25-35	5-10
	16-55	Silty clay, silty clay loam	CH	A-7	0	0	100	100	100	95-100	55-70	30-40
	55-74	Silty clay loam	CH, CL	A-7	0	0	100	100	100	95-100	45-55	20-30

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
175F:												
Lamont----------	0-3	Sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	80-95	25-50	15-25	5-10
	3-6	Fine sandy loam, loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	80-95	15-50	0-25	NP-5
	6-80	Fine sandy loam, loamy sand, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	100	85-95	30-50	20-30	5-10
175G:												
Lamont----------	0-3	Sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	80-95	25-50	15-25	5-10
	3-6	Fine sandy loam, loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	80-95	15-50	0-25	NP-5
	6-80	Fine sandy loam, loam, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	100	85-95	30-50	20-30	5-10
216B:												
Stookey---------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	10-65	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	65-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
216C2:												
Stookey---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	8-40	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	40-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
216C3:												
Stookey---------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	5-50	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	50-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
216D2:												
Stookey---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	8-40	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	40-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
216D3:												
Stookey---------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	5-50	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	50-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
257A:												
Clarksdale------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	8-16	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	8-18
	16-47	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	25-40
	47-67	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	25-45	10-25
	67-80	Silt loam	CL	A-6	0	0	95-100	95-100	95-100	90-100	25-40	10-20
257B:												
Clarksdale------	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	7-12	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-35	8-18
	12-57	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	25-40
	57-62	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	25-45	10-25
	62-80	Silt loam	CL	A-6	0	0	95-100	95-100	95-100	90-100	25-40	10-20
264C2:												
El Dara---------	0-6	Silt loam	CL, ML, CL-ML	A-4	0	0	100	100	95-100	50-60	0-25	NP-10
	6-66	Sandy clay loam, clay loam, sandy loam	CL, SC, SM	A-2-6, A-2-4, A-6	0	0	95-100	95-100	95-100	30-60	20-35	10-20
	66-80	Stratified sand to sandy clay loam	SC-SM, SC, SM, SP-SM	A-2	0	0	100	95-100	95-100	10-30	0-20	NP-10
264D2:												
El Dara---------	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	50-60	0-25	NP-10
	6-66	Sandy clay loam, clay loam, sandy loam	SC, CL, SM	A-2-4, A-2-6, A-6	0	0	95-100	95-100	95-100	30-60	20-35	10-20
	66-80	Stratified sand to sandy clay loam	SC-SM, SC, SM, SP-SM	A-2	0	0	100	95-100	95-100	10-30	0-20	NP-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
264D3:												
El Dara---------	0-3	Sandy loam	CL, SM, ML, SC	A-4	0	0	100	100	95-100	35-55	15-25	NP-10
	3-47	Sandy clay loam, clay loam, sandy loam	CL, SC, SM	A-2-6, A-2-4, A-6	0	0	95-100	95-100	90-100	30-60	20-35	10-20
	47-60	Stratified sand to sandy clay loam	SC, SP-SM, SC-SM, SM	A-2	0	0	100	95-100	95-100	10-30	0-20	NP-10
264E2:												
El Dara---------	0-4	Sandy loam	ML, SC, CL, SM	A-4	0	0	100	100	95-100	35-55	15-25	NP-10
	4-7	Fine sandy loam, loam, silt loam	SC, SC-SM, SM	A-2, A-4	0	0	100	95-100	95-100	30-50	0-20	NP-10
	7-45	Sandy clay loam, clay loam, sandy loam	SC, CL, SM	A-2-6, A-2-4, A-6	0	0	95-100	95-100	95-100	30-60	20-35	10-20
	45-60	Stratified sand to sandy clay loam	SC-SM, SC, SM, SP-SM	A-2	0	0	100	95-100	95-100	10-30	0-20	NP-10
264G:												
El Dara---------	0-5	Fine sandy loam	ML, CL, SC, SM	A-4	0	0	100	100	95-100	35-55	15-25	NP-10
	5-8	Fine sandy loam, loam, silt loam	SC, SC-SM, SM	A-2, A-4	0	0	100	95-100	95-100	30-50	0-20	NP-10
	8-45	Sandy clay loam, clay loam, sandy loam	SC, CL, SM	A-2-4, A-2-6, A-6	0	0	95-100	95-100	95-100	30-60	20-35	10-20
	45-60	Stratified sand to sandy clay loam	SC-SM, SC, SM, SP-SM	A-2	0	0	100	95-100	95-100	10-30	0-20	NP-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
267A:												
Caseyville------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	28-35	9-15
	9-16	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	9-20
	16-50	Silty clay loam, silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	98-100	93-100	30-45	9-20
	50-60	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	93-100	28-35	9-15
267B:												
Caseyville------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	28-35	9-15
	7-12	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	9-20
	12-50	Silty clay loam, silt loam	CL	A-6, A-4, A-7-6	0	0	100	100	98-100	93-100	30-45	9-20
	50-60	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	93-100	28-35	9-15
271C2:												
Timula----------	0-22	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
	22-60	Silt loam, silt	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
271D2:												
Timula----------	0-22	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
	22-60	Silt loam, silt	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
279B:												
Rozetta---------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-55	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-50	15-30
	55-60	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	7-20
279C2:												
Rozetta---------	0-6	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	6-46	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-50	15-30
	46-60	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	7-20
279C3:												
Rozetta---------	0-3	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	95-100	35-45	10-20
	3-46	Silty clay loam	ML	A-6, A-7	0	0	100	100	95-100	95-100	35-50	10-20
	46-60	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-100	25-40	7-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
283B:												
Downsouth-------	0-11	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	30-40	9-15
	11-73	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	98-100	95-100	35-45	15-20
	73-80	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	30-40	9-15
283C2:												
Downsouth-------	0-7	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	30-40	9-15
	7-60	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	98-100	95-100	35-45	15-20
	60-80	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	30-40	9-15
337A:												
Creal-----------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	5-15
	9-19	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-35	4-12
	19-80	Silt loam, silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
384A:												
Edwardsville----	0-18	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	28-40	9-20
	18-60	Silt loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	98-100	95-100	30-45	9-20
	60-80	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	28-35	9-15
384B:												
Edwardsville----	0-12	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	28-40	9-20
	12-60	Silt loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	98-100	95-100	30-45	9-20
	60-80	Silt loam	CL, ML	A-6	0	0	100	100	98-100	95-100	28-35	9-15
441B:												
Wakenda---------	0-16	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	90-100	30-40	5-15
	16-76	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	90-100	35-45	15-25
	76-80	Silt loam, silty clay loam	CL	A-6	0	0	100	100	100	90-100	30-40	11-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
470B2:												
Keller----------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
	9-28	Silty clay loam, silt loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	28-60	Silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	90-100	80-95	75-90	35-55	15-30
	60-80	Silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	90-100	80-95	75-90	35-55	15-30
470C:												
Keller----------	0-15	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
	15-24	Silty clay loam, silt loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	24-80	Silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	90-100	80-95	75-90	35-55	15-30
470C2:												
Keller----------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
	9-28	Silty clay loam, silt loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	28-60	Silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	90-100	80-95	75-90	35-55	15-30
	60-80	Silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0-5	95-100	90-100	80-95	75-90	35-55	15-30
472C2:												
Baylis----------	0-7	Silt loam	CL	A-6	0	0	100	95-100	95-100	90-100	25-40	10-25
	7-24	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	30-45	15-25
	24-80	Silty clay loam, very gravelly silty clay loam, extremely gravelly clay	GC, SC	A-2, A-7, A-6	0-5	15-40	40-80	30-80	30-70	30-50	35-50	20-35

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
472D2:												
Baylis----------	0-7	Silt loam	CL	A-6	0	0	100	95-100	95-100	90-100	25-40	10-25
	7-24	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	30-45	15-25
	24-80	Silty clay loam, very gravelly silty clay loam, extremely gravelly clay	GC, SC	A-2, A-7, A-6	0-5	15-40	40-80	30-80	30-70	30-50	35-50	20-35
472E2:												
Baylis----------	0-7	Silt loam	CL	A-6	0	0	100	95-100	95-100	90-100	25-40	10-25
	7-24	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	30-45	15-25
	24-80	Silty clay loam, gravelly silty clay loam, extremely gravelly clay	GC, SC	A-2, A-7, A-6	0-5	15-40	40-80	30-80	30-70	30-50	35-50	20-35
477B:												
Winfield--------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	8-13	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-45	15-25
	13-33	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	33-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
477C2:												
Winfield--------	0-6	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	6-50	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	50-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
477C3:												
Winfield--------	0-3	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-45	20-25
	3-50	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	20-25
	50-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
515B2:												
Bunkum----------	0-7	Silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	98-100	95-100	25-40	5-15
	7-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-65	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	25-35	9-15
	65-80	Silt loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	25-35	9-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
515C2:												
Bunkum----------	0-7	Silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	98-100	95-100	25-40	5-15
	7-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-65	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	25-35	9-15
	65-85	Silt loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	25-35	9-15
515C3:												
Bunkum----------	0-3	Silty clay loam	CL	A-6, A-4, A-7-6	0	0	100	100	98-100	95-100	30-45	9-20
	3-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-65	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	25-35	9-15
	65-80	Silt loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	25-35	9-15
515D2:												
Bunkum----------	0-7	Silt loam	CL	A-6, A-4, A-7-6	0	0	100	100	98-100	95-100	25-40	5-15
	7-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-65	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	25-35	9-15
	65-85	Silt loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	25-35	9-15
515D3:												
Bunkum----------	0-3	Silty clay loam	CL	A-4, A-7-6, A-6	0	0	100	100	98-100	95-100	30-45	9-20
	3-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-65	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	25-35	9-15
	65-80	Silt loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	25-35	9-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
538B2:												
Emery-----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	7-37	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	37-55	Silty clay loam, silt loam, clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	80-100	35-55	15-30
	55-87	Silty clay loam, silt loam, loam	CL	A-6	0	0	100	95-100	90-100	75-100	30-40	10-20
538C2:												
Emery-----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	7-37	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	37-55	Silty clay loam, silt loam, clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	80-100	35-55	15-30
	55-87	Silty clay loam, silt loam, loam	CL	A-6	0	0	100	95-100	90-100	75-100	30-40	10-20
549D2:												
Marseilles------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	5-27	Clay loam, silty clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	27-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
549D3:												
Marseilles------	0-3	Silty clay loam	ML	A-7, A-6	0-1	0-5	95-100	95-100	90-100	85-100	35-50	10-20
	3-27	Clay loam, silty clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	27-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
549F:												
Marseilles------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	10-35	Clay loam, silty clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	35-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
549G:												
Marseilles------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	10-35	Clay loam, silty clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	35-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
559F:												
Lindley---------	0-12	Loam	CL	A-6	0	0	95-100	90-100	85-95	50-65	25-35	10-15
	12-58	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	85-95	55-75	30-45	10-20
	58-80	Loam, clay loam	CL	A-6	0	0	95-100	90-100	85-95	50-70	25-35	10-15
559G:												
Lindley---------	0-12	Loam	CL	A-6	0	0	95-100	90-100	85-95	50-65	25-35	10-15
	12-58	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	85-95	55-75	30-45	10-20
	58-80	Loam, clay loam	CL	A-6	0	0	95-100	90-100	85-95	50-70	25-35	10-15
606F:												
Goss------------	0-7	Gravelly silt loam	CL, ML, CL-ML	A-4	0	0-10	65-85	65-75	65-75	65-75	20-30	2-10
	7-11	Very gravelly silty clay loam, very gravelly silt loam, gravelly silty clay loam	GC, GC-GM, GM	A-2	0-5	5-40	40-60	35-55	30-50	25-35	20-30	2-10
	11-80	Gravelly silty clay loam, cobbly silty clay, very gravelly clay	GC, SC	A-2-7, A-7	0-5	5-45	45-70	20-65	20-50	20-45	50-70	30-40

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
606G:												
Goss------------	0-7	Gravelly silt loam	CL, CL-ML, ML	A-4	0	0-10	65-85	65-75	65-75	65-75	20-30	2-10
	7-11	Very gravelly silty clay loam, very gravelly silt loam, gravelly silty clay loam	GC-GM, GC, GM	A-2	0-5	5-40	40-60	35-55	30-50	25-35	20-30	2-10
	11-80	Gravelly silty clay loam, cobbly silty clay, very gravelly clay	GC, SC	A-2-7, A-7	0-5	5-45	45-70	20-65	20-50	20-45	50-70	30-40
629C2:												
Crider----------	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	95-100	90-100	85-100	25-35	3-12
	8-35	Silt loam, silty clay loam	CL, CL-ML, ML	A-6, A-4, A-7	0	0	100	95-100	90-100	85-100	25-42	3-20
	35-72	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0-5	85-100	75-100	70-100	60-100	35-65	15-40
629D2:												
Crider----------	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	95-100	90-100	85-100	25-35	3-12
	8-35	Silt loam, silty clay loam	CL, ML, CL-ML	A-6, A-4, A-7	0	0	100	95-100	90-100	85-100	25-42	3-20
	35-72	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0-5	85-100	75-100	70-100	60-100	35-65	15-40
651C2:												
Keswick---------	0-8	Loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	80-100	75-90	60-80	20-30	5-15
	8-47	Clay loam, clay	CH, CL	A-7	0	0-5	90-100	80-100	70-90	55-80	40-70	20-40
	47-60	Clay loam	CL	A-6	0	0-5	90-100	80-100	70-90	55-80	30-40	15-25
651C3:												
Keswick---------	0-5	Clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-90	60-80	35-50	15-25
	5-32	Clay loam, clay	CH, CL	A-7	0	0-5	90-100	80-100	70-90	55-80	40-70	20-40
	32-60	Clay loam	CL	A-6	0	0-5	90-100	80-100	70-90	55-80	30-40	15-25

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
651D2:												
Keswick---------	0-8	Loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	80-100	75-90	60-80	20-30	5-15
	8-47	Clay loam, clay	CH, CL	A-7	0	0-5	90-100	80-100	70-90	55-80	40-70	20-40
	47-60	Clay loam	CL	A-6	0	0-5	90-100	80-100	70-90	55-80	30-40	15-25
651D3:												
Keswick---------	0-5	Clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-90	60-80	35-50	15-25
	5-32	Clay loam, clay	CH, CL	A-7	0	0-5	90-100	80-100	70-90	55-80	40-70	20-40
	32-60	Clay loam	CL	A-6	0	0-5	90-100	80-100	70-90	55-80	30-40	15-25
651E2:												
Keswick---------	0-8	Loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	80-100	75-90	60-80	20-30	5-15
	8-47	Clay loam, clay, silty clay	CH, CL	A-7	0	0-5	90-100	80-100	70-90	55-80	40-70	20-40
	47-60	Clay loam	CL	A-6	0	0-5	90-100	80-100	70-90	55-80	30-40	15-25
652C2:												
Passport--------	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	97-100	95-100	70-90	25-35	7-15
	5-45	Silty clay loam, clay loam, loam	CL	A-6, A-4, A-7-6	0	0	100	93-100	90-100	60-85	28-43	9-21
	45-84	Clay loam, loam, silty clay	CH, CL	A-6, A-7-6	0	0	100	93-97	90-95	55-85	34-52	14-28
652C3:												
Passport--------	0-3	Silty clay loam	CL	A-6, A-7-6	0	0	100	97-100	95-100	75-90	37-43	16-21
	3-35	Silty clay loam, clay loam, loam	CL	A-4, A-6, A-7-6	0	0	100	93-100	90-100	60-85	28-43	9-21
	35-80	Clay loam, loam, silty clay	CH, CL	A-6, A-7-6	0	0	100	93-97	90-95	55-85	34-52	14-28
655C2:												
Ursa------------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	80-100	20-40	5-20
	10-56	Clay, clay loam, silty clay	CH, CL	A-7	0	0-5	95-100	85-98	70-90	55-90	40-60	20-35
	56-80	Clay loam, loam, clay	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	80-90	60-85	35-55	20-35

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
655C3:												
Ursa------------	0-4	Silty clay loam	CL	A-6, A-7	0	0	100	90-100	90-100	80-95	30-50	15-30
	4-45	Clay, clay loam, silty clay	CH, CL	A-7	0	0-5	95-100	85-98	70-90	55-90	40-60	20-35
	45-60	Clay loam, loam, clay	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	80-90	60-85	35-55	20-35
655D2:												
Ursa------------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	80-100	20-40	5-20
	6-56	Clay, clay loam, silty clay loam	CH, CL	A-7	0	0-5	95-100	85-98	70-90	55-90	40-60	20-35
	56-80	Clay loam, loam, clay	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	80-90	60-85	35-55	20-35
655D3:												
Ursa------------	0-4	Silty clay loam	CL	A-6, A-7	0	0	100	90-100	90-100	80-95	30-50	15-30
	4-45	Clay, clay loam, silty clay	CH, CL	A-7	0	0-5	95-100	85-98	70-90	55-90	40-60	20-35
	45-60	Clay loam, loam, clay	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	80-90	60-85	35-55	20-35
660C2:												
Coatsburg-------	0-10	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	10-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	100	95-100	75-90	65-85	50-70	35-55
671A:												
Biggsville------	0-13	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	13-53	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	53-80	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-17
671B:												
Biggsville------	0-13	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	13-53	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	53-80	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-17
675B:												
Greenbush-------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	14-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	60-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	11-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
675C2:												
Greenbush-------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	6-46	Silty clay loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	46-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	11-20
678A:												
Mannon----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	7-12	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-18
	12-59	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	8-20
	59-80	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-17
678B:												
Mannon----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	7-10	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-18
	10-59	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	8-20
	59-80	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-17
785G:												
Lacrescent------	0-21	Channery silt loam	CL, ML	A-6, A-7	0	15-30	80-100	70-100	60-95	50-90	30-45	10-20
	21-38	Cobbly silt loam, cobbly fine sandy loam, very cobbly loam	ML, CL, SC, SM	A-2, A-1, A-4, A-6	0	30-55	55-80	45-80	40-65	20-60	20-35	3-12
	38-60	Extremely cobbly loam, very flaggy silt loam, very cobbly fine sandy loam	ML, SC, CL, SM	A-2, A-1, A-4, A-6	0	50-65	50-75	40-65	35-60	15-55	0-30	NP-12
801B:												
Orthents--------	0-80	Silt loam	CL, CL-ML	A-6, A-4, A-7	0	0	100	100	90-100	80-95	25-45	5-25
816B:												
Stookey---------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	11-43	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	43-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
Timula----------	0-22	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
	22-60	Silt loam, silt	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
Orthents--------	0-80	Silt loam	CL, CL-ML	A-4, A-7, A-6	0	0	100	100	90-100	80-95	25-45	5-25

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
816D:												
Stookey---------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	11-43	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	43-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
Timula----------	0-22	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
	22-60	Silt loam, silt	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
Orthents--------	0-80	Silt loam	CL, CL-ML	A-6, A-4, A-7	0	0	100	100	90-100	80-95	25-45	5-25
829B:												
Biggsville------	0-13	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	13-53	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	53-80	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-17
Mannon----------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	7-18
	9-49	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-40	8-20
	49-60	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	7-17
855A:												
Timewell--------	0-18	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
	18-40	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	45-60	25-40
	40-67	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-50	20-35
	67-80	Silt loam, loam, clay loam	CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20
Ipava-----------	0-14	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	14-41	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	45-70	25-40
	41-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
855B:												
Timewell--------	0-16	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
	16-36	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	45-60	25-40
	36-59	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-50	20-35
	59-70	Silt loam, loam, clay loam	CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20
Ipava-----------	0-12	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	12-41	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	45-70	25-40
	41-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
856F:												
Stookey---------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	9-60	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	60-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
Timula----------	0-22	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
	22-60	Silt loam, silt	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
856G:												
Stookey---------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
	9-60	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-40	10-15
	60-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-30	5-15
Timula----------	0-22	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
	22-60	Silt loam, silt	ML	A-4	0	0	100	100	95-100	85-100	25-35	NP-10
864:												
Pits.												

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
871G:												
Lenzburg--------	0-5	Silty clay loam	CL	A-6, A-7	0-1	2-10	80-100	75-100	65-95	55-85	35-50	15-25
	5-38	Silty clay loam, clay loam, gravelly loam	CL	A-6, A-7	0-2	0-15	75-95	70-90	65-85	60-85	25-45	10-25
	38-60	Silty clay, clay loam, gravelly clay loam	CH, CL	A-6, A-7	0-5	0-25	70-95	60-90	55-90	50-90	30-55	15-30
1070L:												
Beaucoup--------	0-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-25
	15-48	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-30
	48-60	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-7, A-6	0	0	100	100	90-100	65-95	25-45	5-25
	60-80	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-95	20-40	5-20
3226A:												
Wirt------------	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0	98-100	95-100	80-100	60-90	18-30	3-10
	6-12	Silt loam, loam, loamy sand	ML, CL, SC, SM	A-2-4, A-4	0	0	95-100	80-100	50-100	25-85	15-30	2-10
	12-60	Silt loam, gravelly sandy loam, sand	ML, CL-ML, SC-SM, SM	A-1-b, A-2-4, A-4	0	0-2	80-100	50-100	30-95	15-75	0-24	NP-7
3331A:												
Haymond---------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	85-100	20-30	3-10
	7-69	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	3-10
	69-80	Fine sandy loam, silt loam, loam	CL, SM, ML, SC	A-4, A-6	0	0	95-100	90-100	65-100	35-90	15-35	2-15
3333A:												
Wakeland--------	0-10	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	16-28	3-9
	10-50	Silt loam	CL-ML, CL, ML	A-4	0	0	100	100	90-100	80-100	16-28	3-9
	50-80	Silt loam, loam	CL-ML, CL, ML	A-4	0	0	100	100	85-100	60-100	16-28	3-9

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3368L:												
Raveenwash------	0-8	Silt loam	CL-ML, ML	A-4	0	0	100	90-100	80-100	50-75	25-35	4-10
	8-60	Silt loam, loam, loamy sand	CL-ML, SM, ML, SC	A-4, A-2-4, A-6	0	0	100	90-100	80-100	10-70	20-30	3-13
3396A:												
Vesser----------	0-14	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-40	10-20
	14-26	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-40	10-20
	26-80	Silty clay loam	CL	A-7	0	0	100	100	98-100	95-100	40-50	15-25
3451A:												
Lawson----------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-40	5-20
	14-33	Silt loam, silty clay loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	5-10
	33-80	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	60-100	20-45	10-25
3475A:												
Elsah-----------	0-6	Gravelly loam	CL-ML, CL, SC, SC-SM	A-4, A-6	0-1	10-15	75-90	55-70	40-65	35-60	20-35	5-15
	6-29	Gravelly silt loam, very gravelly loam	ML, CL, SC, SM	A-4, A-6	0-5	10-30	50-90	35-70	35-65	35-60	15-30	3-15
	29-60	Very gravelly loam, gravelly loam, very gravelly sandy loam	ML, CL, SC, SM	A-2-6, A-4, A-2-4, A-6	0-10	10-65	45-85	30-70	25-65	20-60	0-25	NP-15
3634A:												
Blyton----------	0-10	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	3-9
	10-80	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	3-9
3877L:												
Blake-----------	0-14	Silt loam	CL	A-6	0	0	100	100	90-100	85-95	30-40	10-20
	14-60	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	85-95	30-50	10-30
Slacwater-------	0-12	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	95-100	90-100	80-100	15-35	3-15
	12-80	Silt loam, silt, silty clay loam	CL	A-6	0	0	100	95-100	90-100	85-100	25-40	10-25

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8070A:												
Beaucoup--------	0-15	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-25
	15-48	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-30
	48-60	Stratified silt loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	90-100	65-95	25-45	5-25
	60-80	Stratified silt loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-95	20-40	5-20
8073A:												
Ross------------	0-21	Silt loam, loam	CL, ML, CL-ML	A-4, A-6	0	0	90-100	90-100	80-100	65-95	20-35	NP-12
	21-48	Loam, silt loam, sandy clay loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	90-100	85-100	70-100	55-95	22-45	3-20
	48-75	Stratified gravelly sandy loam to silt loam	GM, CL, ML, SM	A-4, A-2, A-6	0	0-5	65-100	45-100	30-100	25-80	0-30	NP-12
8077A:												
Huntsville------	0-32	Silt loam	CL	A-6	0	0	100	95-100	90-100	85-100	25-40	10-20
	32-42	Silt loam	CL	A-6	0	0	100	95-100	90-100	85-100	20-35	10-20
	42-80	Silt loam, loam, very fine sandy loam	CL-ML, CL, SC, SC-SM	A-2, A-6, A-4	0	0	95-100	90-100	85-95	30-85	20-35	5-20
8092A:												
Sarpy-----------	0-9	Sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-80	2-15	---	NP
	9-60	Sandy loam, loamy sand, sand	SP, SM, SP-SM	A-2-4, A-3	0	0	100	100	60-80	2-35	---	NP
8162A:												
Gorham----------	0-10	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	70-90	35-50	15-25
	10-40	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	100	90-95	40-55	15-30
	40-44	Clay loam, sandy clay loam, loam	CL	A-6, A-7	0	0	100	80-90	70-80	50-80	30-45	10-20
	44-60	Fine sand, loamy fine sand, sandy loam	SC, SC-SM, SP-SM, SM	A-2, A-4	0	0	100	75-90	55-80	10-50	0-30	NP-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8180A:												
Dupo------------	0-7	Silt loam	CL, CL-ML	A-4	0	0	100	100	100	95-100	20-30	5-10
	7-36	Silt loam, silt	CL, CL-ML	A-4	0	0	100	100	100	95-100	20-30	5-10
	36-85	Silty clay, clay, silty clay loam	CH	A-7-6	0	0	100	100	100	98-100	50-70	30-45
8217A:												
Twomile---------	0-10	Silt loam	CL, CL-ML	A-4	0	0	100	100	95-100	90-100	20-30	4-9
	10-26	Silt loam, silt	CL, CL-ML	A-4	0	0	100	100	95-100	90-100	20-30	4-9
	26-58	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-95	30-45	15-25
	58-80	Clay loam, silt loam, loam	CL	A-6	0	0	100	95-100	90-100	70-90	30-40	10-20
8284A:												
Tice------------	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	30-45	10-20
	14-80	Silty clay loam, silt loam	CH, CL	A-7	0	0	100	100	95-100	85-95	40-55	15-30
8333A:												
Wakeland--------	0-10	Silt loam	CL, ML, CL-ML	A-4	0	0	100	100	90-100	80-100	16-28	3-9
	10-50	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	16-28	3-9
	50-80	Silt loam, loam	CL, ML, CL-ML	A-4	0	0	100	100	85-100	60-100	16-28	3-9
8349B:												
Zumbro----------	0-11	Sandy loam	SM	A-4	0	0	100	95-100	70-95	35-50	15-28	NP
	11-33	Loamy sand, loamy fine sand	SM	A-2	0	0	100	95-100	60-95	15-30	10-21	NP
	33-42	Sand, fine sand, loamy sand	SM, SP-SM, SP	A-2, A-3	0	0	95-100	85-100	60-95	4-30	---	NP
	42-80	Sand, fine sand, coarse sand	SM, SP-SM, SP	A-2, A-3	0	0	90-100	80-100	50-80	4-20	---	NP
8396A:												
Vesser----------	0-14	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-40	10-20
	14-26	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-40	10-20
	26-80	Silty clay loam	CL	A-7	0	0	100	100	98-100	95-100	40-50	15-25

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8404A:												
Titus-----------	0-13	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	90-100	40-55	20-30
	13-68	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-55	20-30
	68-80	Silty clay loam, silt loam, loam	CL	A-6	0	0	100	90-100	70-90	55-85	20-40	10-25
8451A:												
Lawson----------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-40	5-20
	14-33	Silt loam, silty clay loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	5-10
	33-80	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	60-100	20-45	10-25
8452A:												
Riley-----------	0-13	Silty clay loam	CL	A-6	0	0	100	100	95-100	80-100	30-40	15-25
	13-27	Sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0	100	100	90-100	40-85	35-50	15-25
	27-60	Loamy fine sand, sand, loamy sand	SM, SC-SM, SP-SM	A-2, A-4	0	0	100	100	90-100	10-40	0-0	NP
8634A:												
Blyton----------	0-11	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	3-9
	11-25	Silt loam	CL-ML, CL, ML	A-4	0	0	100	100	90-100	80-100	20-30	3-9
	25-64	Silt loam, loam	CL-ML, CL, ML	A-4	0	0	100	100	85-100	60-100	20-30	3-9
W:												
Water.												

Table 19.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
6B2:												
Fishhook----------------	0-7	20-27	1.30-1.50	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	7-25	27-35	1.40-1.60	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	25-49	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
	49-80	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
6C2:												
Fishhook----------------	0-5	20-27	1.30-1.50	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	5-22	27-35	1.40-1.60	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	22-55	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
	55-80	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
6C3:												
Fishhook----------------	0-3	27-35	1.35-1.55	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	3	7	38
	3-27	27-35	1.40-1.60	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	27-68	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
	68-82	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
6D2:												
Fishhook----------------	0-5	20-27	1.30-1.50	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	5-22	27-35	1.40-1.60	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	22-68	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
	68-82	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
6D3:												
Fishhook----------------	0-3	27-35	1.35-1.55	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	3	7	38
	3-27	27-35	1.40-1.60	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	27-68	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
	68-82	35-45	1.55-1.75	0.06-0.20	0.09-0.16	6.0-8.9	0.0-1.0	.28	.28			
7C2:												
Atlas-------------------	0-13	20-30	1.30-1.50	0.20-0.60	0.20-0.25	3.0-5.9	1.0-3.0	.32	.32	3	6	48
	13-37	35-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.28	.28			
	37-61	30-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.28	.28			
	61-80	20-30	1.35-1.60	0.06-0.20	0.07-0.18	3.0-5.9	0.0-1.0	.28	.28			
7C3:												
Atlas-------------------	0-5	30-40	1.35-1.55	0.06-0.20	0.14-0.19	6.0-8.9	0.5-1.0	.28	.28	2	7	38
	5-20	35-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.28	.28			
	20-43	30-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.28	.28			
	43-80	20-30	1.35-1.60	0.06-0.20	0.07-0.18	3.0-5.9	0.0-1.0	.28	.28			
8E2:												
Hickory-----------------	0-10	19-25	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	10-53	24-35	1.45-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	53-58	15-32	1.50-1.70	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.60-2.00	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
8F:												
Hickory-----------------	0-12	19-25	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	12-53	24-35	1.45-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	53-58	15-32	1.50-1.70	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.60-2.00	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
8G:												
Hickory------------------	0-4	19-25	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-12	15-22	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			
	12-53	24-35	1.45-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	53-58	15-32	1.50-1.70	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.60-2.00	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
16A:												
Rushville----------------	0-7	15-27	1.25-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-13	10-22	1.30-1.50	0.06-0.20	0.15-0.20	0.0-2.9	0.0-1.0	.55	.55			
	13-32	35-48	1.30-1.50	0.01-0.06	0.09-0.20	6.0-8.9	0.0-0.5	.37	.37			
	32-50	30-42	1.40-1.60	0.01-0.20	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	50-80	18-30	1.40-1.55	0.06-0.20	0.16-0.21	3.0-5.9	0.0-0.5	.49	.49			
17A:												
Keomah-------------------	0-11	16-26	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	11-18	16-26	1.35-1.45	0.20-0.60	0.18-0.20	0.0-2.9	0.2-1.0	.49	.49			
	18-33	35-42	1.30-1.45	0.06-0.60	0.18-0.20	6.0-8.9	0.0-0.5	.37	.37			
	33-80	24-38	1.40-1.55	0.20-0.60	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
17B:												
Keomah-------------------	0-7	16-26	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	16-26	1.35-1.45	0.20-0.60	0.18-0.20	0.0-2.9	0.2-1.0	.49	.49			
	11-31	35-42	1.30-1.45	0.06-0.60	0.18-0.20	6.0-8.9	0.0-0.5	.37	.37			
	31-80	24-38	1.40-1.55	0.20-0.60	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
37A:												
Worthen------------------	0-29	12-22	1.20-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	29-64	15-26	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.5-2.0	.49	.49			
	64-80	15-24	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.0-1.0	.49	.49			
37B:												
Worthen------------------	0-24	12-22	1.20-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	24-56	15-26	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.5-2.0	.49	.49			
	56-80	15-24	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.0-1.0	.49	.49			
50A:												
Virden-------------------	0-16	27-35	1.20-1.40	0.60-2.00	0.21-0.24	3.0-5.9	3.0-6.0	.24	.24	5	7	38
	16-49	35-42	1.20-1.45	0.20-0.60	0.11-0.20	6.0-8.9	0.0-2.0	.37	.37			
	49-60	25-33	1.25-1.55	0.20-0.60	0.18-0.22	3.0-5.9	0.0-0.5	.43	.43			
75A:												
Drury--------------------	0-13	10-20	1.20-1.40	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	13-50	18-25	1.25-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.2	.49	.49			
	50-80	15-20	1.30-1.50	0.60-2.00	0.12-0.21	0.0-2.9	0.0-0.2	.43	.43			
75B:												
Drury--------------------	0-13	10-20	1.20-1.40	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	13-50	18-25	1.25-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.2	.49	.49			
	50-80	15-20	1.30-1.50	0.60-2.00	0.12-0.21	0.0-2.9	0.0-0.2	.43	.43			
75C2:												
Drury--------------------	0-6	10-20	1.20-1.40	0.60-2.00	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	6-31	18-25	1.25-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.2	.49	.49			
	31-80	15-20	1.30-1.50	0.60-2.00	0.12-0.21	0.0-2.9	0.0-0.2	.43	.43			
79B:												
Menfro-------------------	0-8	18-27	1.25-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-14	25-30	1.30-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	14-40	27-33	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	40-80	8-20	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.55	.55			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
79C2:												
Menfro------------------	0-8	18-27	1.25-1.40	0.60-2.00	0.22-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	8-55	27-33	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	55-80	8-20	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.55	.55			
79C3:												
Menfro------------------	0-4	27-30	1.30-1.45	0.60-2.00	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	4-55	27-33	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	55-60	8-20	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.55	.55			
79D2:												
Menfro------------------	0-8	18-27	1.25-1.40	0.60-2.00	0.22-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	8-55	27-33	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	55-80	8-20	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.55	.55			
79D3:												
Menfro------------------	0-4	27-30	1.30-1.45	0.60-2.00	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	4-55	27-33	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	55-60	8-20	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.55	.55			
81A:												
Littleton---------------	0-9	18-27	1.20-1.45	0.60-2.00	0.20-0.24	0.0-2.9	3.0-4.0	.32	.32	5	6	48
	9-32	22-27	1.20-1.40	0.60-2.00	0.22-0.24	0.0-2.9	0.5-2.0	.49	.49			
	32-60	18-27	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.0-1.0	.49	.49			
86B:												
Osco--------------------	0-12	20-26	1.25-1.30	0.60-2.00	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	12-36	24-35	1.30-1.35	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	36-60	20-30	1.35-1.40	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
88B:												
Sparta------------------	0-23	3-10	1.20-1.40	2.00-6.00	0.09-0.12	0.0-2.9	1.0-2.0	.02	.02	5	2	134
	23-34	1-8	1.40-1.60	6.00-20.00	0.05-0.11	0.0-2.9	0.1-1.0	.10	.10			
	34-60	0-5	1.50-1.70	6.00-20.00	0.04-0.07	0.0-2.9	0.0-0.5	.05	.05			
90A:												
Bethalto----------------	0-8	18-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-14	15-25	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	14-63	20-35	1.30-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	63-80	18-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
90B:												
Bethalto----------------	0-7	18-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-12	15-25	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	12-63	20-35	1.30-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	63-80	18-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
111A:												
Rubio-------------------	0-9	16-22	1.35-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	3	6	48
	9-16	16-22	1.40-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.43	.43			
	16-55	35-42	1.45-1.50	0.06-0.20	0.12-0.18	6.0-8.9	0.0-0.5	.37	.37			
	55-74	32-40	1.50-1.55	0.20-0.60	0.18-0.20	6.0-8.9	0.0-0.5	.43	.43			
175F:												
Lamont------------------	0-3	10-15	1.50-1.55	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.24	.24	4	3	86
	3-6	5-15	1.50-1.55	2.00-6.00	0.14-0.16	0.0-2.9	0.0-0.5	.24	.24			
	6-80	10-22	1.45-1.65	2.00-6.00	0.14-0.16	0.0-2.9	0.0-0.5	.24	.24			
175G:												
Lamont------------------	0-3	10-15	1.50-1.55	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.24	.24	4	3	86
	3-6	5-15	1.50-1.55	2.00-6.00	0.14-0.16	0.0-2.9	0.0-0.5	.24	.24			
	6-80	10-22	1.45-1.65	2.00-6.00	0.14-0.16	0.0-2.9	0.0-0.5	.24	.24			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
216B:												
Stookey-----------------	0-10	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.43	.43	5	5	56
	10-65	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	65-80	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
216C2:												
Stookey-----------------	0-8	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-2.0	.43	.43	5	5	56
	8-40	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	40-60	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
216C3:												
Stookey-----------------	0-5	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	0.5-1.0	.43	.43	4	5	56
	5-50	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	50-60	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
216D2:												
Stookey-----------------	0-8	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-2.0	.43	.43	5	5	56
	8-40	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	40-60	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
216D3:												
Stookey-----------------	0-5	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	0.5-1.0	.43	.43	4	5	56
	5-50	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	50-60	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
257A:												
Clarksdale--------------	0-8	20-27	1.30-1.50	0.60-2.00	0.22-0.25	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-16	15-27	1.25-1.50	0.20-0.60	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	16-47	35-45	1.30-1.50	0.20-0.60	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	47-67	20-30	1.40-1.60	0.20-0.60	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	67-80	18-27	1.40-1.60	0.20-0.60	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
257B:												
Clarksdale--------------	0-7	20-27	1.30-1.50	0.60-2.00	0.22-0.25	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	7-12	15-27	1.25-1.50	0.20-0.60	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	12-57	35-45	1.30-1.50	0.20-0.60	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	57-62	20-30	1.40-1.60	0.20-0.60	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	62-80	18-27	1.40-1.60	0.20-0.60	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
264C2:												
El Dara-----------------	0-6	10-25	1.30-1.50	0.60-2.00	0.18-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	6-66	18-30	1.35-1.60	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.2	.32	.32			
	66-80	5-25	1.50-1.80	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.1	.24	.24			
264D2:												
El Dara-----------------	0-6	10-25	1.30-1.50	0.60-2.00	0.18-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	6-66	18-30	1.35-1.60	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.2	.32	.32			
	66-80	5-25	1.50-1.80	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.1	.24	.24			
264D3:												
El Dara-----------------	0-3	10-20	1.30-1.50	0.60-2.00	0.13-0.18	0.0-2.9	0.5-1.0	.20	.20	4	3	86
	3-47	18-30	1.35-1.60	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.2	.32	.32			
	47-60	5-25	1.50-1.80	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.1	.24	.24			
264E2:												
El Dara-----------------	0-4	10-20	1.30-1.50	0.60-2.00	0.13-0.18	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	4-7	5-20	1.35-1.55	0.60-2.00	0.10-0.18	0.0-2.9	0.0-0.5	.24	.24			
	7-45	18-30	1.35-1.60	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.2	.32	.32			
	45-60	5-25	1.50-1.80	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.1	.24	.24			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
264G:												
El Dara-----------------	0-5	10-20	1.30-1.50	0.60-2.00	0.13-0.18	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-8	5-20	1.35-1.55	0.60-2.00	0.10-0.18	0.0-2.9	0.0-0.5	.24	.24			
	8-45	18-30	1.35-1.60	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.2	.32	.32			
	45-60	5-25	1.50-1.80	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.1	.24	.24			
267A:												
Caseyville--------------	0-9	18-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	9-16	15-30	1.30-1.40	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.49	.49			
	16-50	20-35	1.30-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	50-60	18-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
267B:												
Caseyville--------------	0-7	18-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-12	15-30	1.30-1.40	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.49	.49			
	12-50	20-35	1.30-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	50-60	18-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
271C2:												
Timula------------------	0-22	10-18	1.30-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	22-60	10-18	1.40-1.60	0.60-2.00	0.18-0.20	0.0-2.9	0.2-0.5	.55	.55			
271D2:												
Timula------------------	0-22	10-18	1.30-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	22-60	10-18	1.40-1.60	0.60-2.00	0.18-0.20	0.0-2.9	0.2-0.5	.55	.55			
279B:												
Rozetta-----------------	0-7	15-27	1.20-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	12-27	1.20-1.40	0.60-2.00	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	11-55	27-35	1.35-1.55	0.60-2.00	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	55-60	20-30	1.40-1.60	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279C2:												
Rozetta-----------------	0-6	15-27	1.20-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-46	27-35	1.35-1.55	0.60-2.00	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	46-60	20-30	1.40-1.60	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279C3:												
Rozetta-----------------	0-3	27-35	1.30-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	3-46	27-35	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	46-60	15-27	1.40-1.60	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
283B:												
Downsouth---------------	0-11	18-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	11-73	24-35	1.25-1.40	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	73-80	18-27	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
283C2:												
Downsouth---------------	0-7	18-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	7-60	24-35	1.25-1.40	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	60-80	18-27	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
337A:												
Creal-------------------	0-9	20-27	1.30-1.50	0.20-0.60	0.22-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	9-19	18-25	1.35-1.60	0.20-0.60	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
	19-80	25-35	1.35-1.60	0.20-0.60	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
384A:												
Edwardsville------------	0-18	20-30	1.20-1.35	0.60-2.00	0.22-0.24	3.0-5.9	4.0-6.0	.28	.28	5	6	48
	18-60	20-35	1.30-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	60-80	18-25	1.30-1.55	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
384B:												
Edwardsville	0-12	20-30	1.20-1.35	0.60-2.00	0.22-0.24	3.0-5.9	4.0-6.0	.28	.28	5	6	48
	12-60	20-35	1.30-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	60-80	18-25	1.30-1.55	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
441B:												
Wakenda	0-16	18-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	16-76	25-35	1.30-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	76-80	20-30	1.20-1.50	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
470B2:												
Keller	0-9	20-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	9-28	25-35	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	28-60	30-42	1.50-1.70	0.06-0.20	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
	60-80	30-42	1.50-1.70	0.06-0.20	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
470C:												
Keller	0-15	20-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	15-24	25-35	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	24-80	30-42	1.50-1.70	0.06-0.20	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
470C2:												
Keller	0-9	20-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	9-28	25-35	1.35-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	28-60	30-42	1.50-1.70	0.06-0.20	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
	60-80	30-42	1.50-1.70	0.06-0.20	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
472C2:												
Baylis	0-7	20-27	1.30-1.50	0.60-2.00	0.21-0.25	3.0-5.9	1.0-3.0	.43	.43	4	6	48
	7-24	27-35	1.35-1.60	0.60-2.00	0.20-0.24	3.0-5.9	0.0-1.0	.37	.37			
	24-80	32-42	1.25-1.45	0.60-2.00	0.06-0.08	3.0-5.9	0.0-0.5	.17	.20			
472D2:												
Baylis	0-7	20-27	1.30-1.50	0.60-2.00	0.21-0.25	3.0-5.9	1.0-3.0	.43	.43	4	6	48
	7-24	27-35	1.35-1.60	0.60-2.00	0.20-0.24	3.0-5.9	0.0-1.0	.37	.37			
	24-80	32-42	1.25-1.45	0.60-2.00	0.06-0.08	3.0-5.9	0.0-0.5	.17	.20			
472E2:												
Baylis	0-7	20-27	1.30-1.50	0.60-2.00	0.21-0.25	3.0-5.9	1.0-3.0	.43	.43	4	6	48
	7-24	27-35	1.35-1.60	0.60-2.00	0.20-0.24	3.0-5.9	0.0-1.0	.37	.37			
	24-80	32-42	1.25-1.45	0.60-2.00	0.06-0.08	3.0-5.9	0.0-0.5	.17	.20			
477B:												
Winfield	0-8	20-27	1.30-1.50	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-13	22-30	1.30-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.49	.49			
	13-33	24-35	1.30-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	33-60	20-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
477C2:												
Winfield	0-6	20-27	1.30-1.50	0.60-2.00	0.22-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	6-50	24-35	1.30-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	20-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
477C3:												
Winfield	0-3	27-30	1.30-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	3-50	24-35	1.30-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	20-27	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
515B2:												
Bunkum	0-7	18-26	1.25-1.35	0.20-0.60	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-50	25-35	1.25-1.45	0.20-0.60	0.16-0.22	3.0-5.9	0.5-1.0	.37	.37			
	50-65	18-27	1.30-1.50	0.20-0.60	0.18-0.22	0.0-2.9	0.5-1.0	.37	.37			
	65-80	15-27	1.30-1.55	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
515C2:												
Bunkum------------------	0-7	18-26	1.25-1.35	0.20-0.60	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-50	25-35	1.25-1.45	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.37	.37			
	50-65	18-27	1.30-1.50	0.20-0.60	0.18-0.22	0.0-2.9	0.5-1.0	.37	.37			
	65-85	15-27	1.30-1.55	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
515C3:												
Bunkum------------------	0-3	27-35	1.25-1.35	0.20-0.60	0.20-0.24	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	3-50	25-35	1.25-1.45	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.37	.37			
	50-65	18-27	1.30-1.50	0.20-0.60	0.18-0.22	0.0-2.9	0.5-1.0	.37	.37			
	65-80	15-27	1.30-1.55	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
515D2:												
Bunkum------------------	0-7	18-26	1.25-1.35	0.20-0.60	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-50	25-35	1.25-1.45	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.37	.37			
	50-65	18-27	1.30-1.50	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
	65-85	15-27	1.30-1.55	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
515D3:												
Bunkum------------------	0-3	27-35	1.25-1.35	0.20-0.60	0.20-0.24	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	3-50	25-35	1.25-1.45	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.37	.37			
	50-65	18-27	1.30-1.50	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
	65-80	15-27	1.30-1.55	0.20-0.60	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
538B2:												
Emery--------------------	0-7	20-26	1.35-1.55	0.60-2.00	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-37	20-35	1.40-1.60	0.60-2.00	0.21-0.24	3.0-5.9	0.0-0.5	.37	.37			
	37-55	20-30	1.40-1.60	0.60-2.00	0.14-0.24	3.0-5.9	0.0-0.5	.37	.37			
	55-87	18-35	1.40-1.65	0.60-2.00	0.14-0.24	0.0-2.9	0.0-0.5	.37	.37			
538C2:												
Emery--------------------	0-7	20-26	1.35-1.55	0.60-2.00	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-37	20-35	1.40-1.60	0.60-2.00	0.21-0.24	3.0-5.9	0.0-0.5	.37	.37			
	37-55	20-30	1.40-1.60	0.60-2.00	0.14-0.24	3.0-5.9	0.0-0.5	.37	.37			
	55-87	18-35	1.40-1.65	0.60-2.00	0.14-0.24	0.0-2.9	0.0-0.5	.37	.37			
549D2:												
Marseilles---------------	0-5	20-27	1.20-1.40	0.57-1.98	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	3	6	48
	5-27	27-42	1.35-1.60	0.06-0.20	0.09-0.20	3.0-6.0	0.0-0.5	.37	.37			
	27-60	---	---	0.00-0.20	---	---	---	---	---			
549D3:												
Marseilles---------------	0-3	27-35	1.25-1.45	0.57-1.98	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37	2	7	38
	3-27	27-42	1.35-1.60	0.06-0.20	0.09-0.20	3.0-5.9	0.0-0.5	.37	.37			
	27-60	---	---	0.00-0.20	---	---	---	---	---			
549F:												
Marseilles---------------	0-10	20-27	1.20-1.40	0.57-1.98	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-35	27-42	1.35-1.60	0.06-0.20	0.09-0.20	3.0-6.0	0.0-0.5	.37	.37			
	35-60	---	---	0.00-0.20	---	---	---	---	---			
549G:												
Marseilles---------------	0-10	20-27	1.20-1.40	0.57-1.98	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-35	27-42	1.35-1.60	0.06-0.20	0.09-0.20	3.0-6.0	0.0-0.5	.37	.37			
	35-60	---	---	0.00-0.20	---	---	---	---	---			
559F:												
Lindley------------------	0-12	18-27	1.20-1.40	0.60-2.00	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	12-58	25-35	1.35-1.55	0.20-0.60	0.14-0.18	3.0-5.9	0.1-1.0	.32	.32			
	58-80	18-32	1.40-1.60	0.20-0.60	0.12-0.16	3.0-5.9	0.1-0.5	.37	.37			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
559G:												
Lindley	0-12	18-27	1.20-1.40	0.60-2.00	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	12-58	25-35	1.35-1.55	0.20-0.60	0.14-0.18	3.0-5.9	0.1-1.0	.32	.32			
	58-80	18-32	1.40-1.60	0.20-0.60	0.12-0.16	3.0-5.9	0.1-0.5	.37	.37			
606F:												
Goss	0-7	10-27	1.10-1.30	2.00-6.00	0.06-0.17	0.0-2.9	0.5-2.0	.28	.32	2	8	0
	7-11	20-30	1.10-1.30	2.00-6.00	0.06-0.10	0.0-2.9	0.0-0.1	.32	.37			
	11-80	35-80	1.30-1.50	0.60-2.00	0.04-0.09	3.0-5.9	0.0-0.5	.15	.17			
606G:												
Goss	0-7	10-27	1.10-1.30	2.00-6.00	0.06-0.17	0.0-2.9	0.5-2.0	.28	.32	2	8	0
	7-11	20-30	1.10-1.30	2.00-6.00	0.06-0.10	0.0-2.9	0.0-0.1	.32	.37			
	11-80	35-80	1.30-1.50	0.60-2.00	0.04-0.09	3.0-5.9	0.0-0.5	.15	.17			
629C2:												
Crider	0-8	15-27	1.20-1.40	0.60-2.00	0.19-0.23	0.0-2.9	2.0-4.0	.43	.43	5	6	48
	8-35	18-35	1.20-1.45	0.60-2.00	0.18-0.23	0.0-2.9	0.0-0.5	.37	.37			
	35-72	30-60	1.20-1.55	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.20	.20			
629D2:												
Crider	0-8	15-27	1.20-1.40	0.60-2.00	0.19-0.23	0.0-2.9	2.0-4.0	.43	.43	5	6	48
	8-35	18-35	1.20-1.45	0.60-2.00	0.18-0.23	0.0-2.9	0.0-0.5	.37	.37			
	35-72	30-60	1.20-1.55	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.20	.20			
651C2:												
Keswick	0-8	22-27	1.45-1.50	0.60-2.00	0.17-0.22	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	8-47	35-60	1.55-1.60	0.06-0.20	0.11-0.15	6.0-8.9	0.0-0.5	.28	.28			
	47-60	30-40	1.60-1.75	0.20-0.60	0.12-0.16	3.0-5.9	0.0-0.5	.28	.28			
651C3:												
Keswick	0-5	27-40	1.45-1.50	0.20-0.60	0.17-0.19	3.0-5.9	0.5-1.0	.28	.28	2	4	86
	5-32	35-60	1.55-1.60	0.06-0.20	0.11-0.15	6.0-8.9	0.0-0.5	.28	.28			
	32-60	30-40	1.60-1.75	0.20-0.60	0.12-0.16	3.0-5.9	0.0-0.5	.28	.28			
651D2:												
Keswick	0-8	22-27	1.45-1.50	0.60-2.00	0.17-0.22	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	8-47	35-60	1.55-1.60	0.06-0.20	0.11-0.15	6.0-8.9	0.0-0.5	.28	.28			
	47-60	30-40	1.60-1.75	0.20-0.60	0.12-0.16	3.0-5.9	0.0-0.5	.28	.28			
651D3:												
Keswick	0-5	27-40	1.45-1.50	0.20-0.60	0.17-0.19	3.0-5.9	0.5-1.0	.28	.28	2	4	86
	5-32	35-60	1.55-1.60	0.06-0.20	0.11-0.15	6.0-8.9	0.0-0.5	.28	.28			
	32-60	30-40	1.60-1.75	0.20-0.60	0.12-0.16	3.0-5.9	0.0-0.5	.28	.28			
651E2:												
Keswick	0-8	22-27	1.45-1.50	0.60-2.00	0.17-0.22	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	8-47	35-60	1.55-1.60	0.06-0.20	0.11-0.15	6.0-8.9	0.0-0.5	.28	.28			
	47-60	30-40	1.60-1.75	0.20-0.60	0.12-0.16	3.0-5.9	0.0-0.5	.28	.28			
652C2:												
Passport	0-5	15-27	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-45	18-35	1.40-1.60	0.20-0.60	0.15-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-84	25-45	1.45-1.65	0.06-0.20	0.14-0.19	6.0-8.9	0.0-0.5	.28	.28			
652C3:												
Passport	0-3	27-35	1.35-1.55	0.20-0.60	0.21-0.23	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	3-35	18-35	1.40-1.60	0.20-0.60	0.15-0.20	3.0-5.9	0.0-1.0	.37	.37			
	35-80	25-45	1.45-1.65	0.06-0.20	0.14-0.19	6.0-8.9	0.0-0.5	.28	.28			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
655C2:												
Ursa	0-10	15-27	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-56	35-45	1.50-1.70	0.06-0.20	0.09-0.17	6.0-8.9	0.5-1.0	.28	.28			
	56-80	25-45	1.55-1.75	0.06-0.20	0.08-0.17	3.0-5.9	0.0-0.5	.28	.28			
655C3:												
Ursa	0-4	35-40	1.40-1.60	0.20-0.60	0.11-0.19	3.0-5.9	0.5-1.0	.28	.28	2	4	86
	4-45	35-45	1.50-1.70	0.06-0.20	0.09-0.17	6.0-8.9	0.5-1.0	.28	.28			
	45-60	25-45	1.55-1.75	0.06-0.20	0.08-0.17	3.0-5.9	0.0-0.5	.28	.28			
655D2:												
Ursa	0-6	15-27	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	6-56	35-45	1.50-1.70	0.06-0.20	0.09-0.17	6.0-8.9	0.5-1.0	.28	.28			
	56-80	25-45	1.55-1.75	0.06-0.20	0.08-0.17	3.0-5.9	0.0-0.5	.28	.28			
655D3:												
Ursa	0-4	35-40	1.40-1.60	0.20-0.60	0.11-0.19	3.0-5.9	0.5-1.0	.28	.28	2	4	86
	4-45	35-45	1.50-1.70	0.06-0.20	0.09-0.17	6.0-8.9	0.5-1.0	.28	.28			
	45-60	25-45	1.55-1.75	0.06-0.20	0.08-0.17	3.0-5.9	0.0-0.5	.28	.28			
660C2:												
Coatsburg	0-10	20-30	1.20-1.40	0.20-0.60	0.22-0.24	3.0-5.9	3.0-5.0	.24	.24	3	6	48
	10-80	35-45	1.50-1.70	0.01-0.06	0.09-0.13	6.0-8.9	0.0-1.0	.28	.28			
671A:												
Biggsville	0-13	18-27	1.10-1.20	0.60-2.00	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	13-53	18-25	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.5-2.0	.43	.43			
	53-80	15-27	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
671B:												
Biggsville	0-13	18-27	1.10-1.20	0.60-2.00	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	13-53	18-25	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.5-2.0	.43	.43			
	53-80	15-27	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
675B:												
Greenbush	0-14	18-25	1.25-1.30	0.60-2.00	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	14-60	26-35	1.30-1.35	0.60-2.00	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	60-80	18-27	1.35-1.45	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
675C2:												
Greenbush	0-6	18-25	1.25-1.30	0.60-2.00	0.21-0.23	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	6-46	26-35	1.30-1.35	0.60-2.00	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	46-60	18-27	1.35-1.45	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
678A:												
Mannon	0-7	15-22	1.10-1.20	0.60-2.00	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-12	15-22	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.43	.43			
	12-59	18-27	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.2-1.0	.43	.43			
	59-80	16-24	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
678B:												
Mannon	0-7	15-22	1.10-1.20	0.60-2.00	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-10	15-22	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.43	.43			
	10-59	18-27	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.2-1.0	.43	.43			
	59-80	16-24	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
785G:												
Lacrescent	0-21	18-33	1.25-1.40	0.60-2.00	0.15-0.22	0.0-2.9	3.0-5.0	.32	.37	5	8	0
	21-38	8-23	1.30-1.50	0.60-6.00	0.06-0.09	0.0-2.9	0.5-2.0	.43	.49			
	38-60	8-20	1.30-1.50	2.00-6.00	0.05-0.08	0.0-2.9	0.0-0.5	.37	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
801B:												
Orthents	0-80	20-35	1.35-1.55	0.20-2.00	0.18-0.22	3.0-5.9	0.2-1.0	.49	.49	5	6	48
816B:												
Stookey	0-11	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.43	.43	5	5	56
	11-43	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	43-60	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
Timula	0-22	10-18	1.30-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	22-60	10-18	1.40-1.60	0.60-2.00	0.18-0.20	0.0-2.9	0.2-0.5	.55	.55			
Orthents	0-80	20-35	1.35-1.55	0.20-2.00	0.18-0.22	3.0-5.9	0.2-1.0	.49	.49	5	6	48
816D:												
Stookey	0-11	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.43	.43	5	5	56
	11-43	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	43-60	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
Timula	0-22	10-18	1.30-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	22-60	10-18	1.40-1.60	0.60-2.00	0.18-0.20	0.0-2.9	0.2-0.5	.55	.55			
Orthents	0-80	20-35	1.35-1.55	0.20-2.00	0.18-0.22	3.0-5.9	0.2-1.0	.49	.49	5	6	48
829B:												
Biggsville	0-13	18-27	1.10-1.20	0.60-2.00	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	13-53	18-25	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.5-2.0	.43	.43			
	53-80	15-27	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
Mannon	0-9	15-22	1.10-1.20	0.60-2.00	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-49	18-27	1.15-1.30	0.60-2.00	0.20-0.22	0.0-2.9	0.2-1.0	.43	.43			
	49-60	16-24	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
855A:												
Timewell	0-18	20-27	1.15-1.30	0.60-2.00	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	18-40	35-42	1.20-1.40	0.20-0.60	0.12-0.17	6.0-8.9	0.0-1.0	.37	.37			
	40-67	25-40	1.20-1.40	0.20-0.60	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	67-80	20-30	1.30-1.50	0.20-0.60	0.16-0.21	3.0-5.9	0.0-0.5	.49	.49			
Ipava	0-14	20-27	1.15-1.35	0.60-2.00	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	14-41	35-43	1.25-1.50	0.20-0.60	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	41-80	20-30	1.30-1.55	0.20-0.60	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
855B:												
Timewell	0-16	20-27	1.15-1.30	0.60-2.00	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	16-36	35-42	1.20-1.40	0.20-0.60	0.12-0.17	6.0-8.9	0.0-1.0	.37	.37			
	36-59	25-40	1.20-1.40	0.20-0.60	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	59-70	20-30	1.30-1.50	0.20-0.60	0.16-0.21	3.0-5.9	0.0-0.5	.49	.49			
Ipava	0-12	20-27	1.15-1.35	0.60-2.00	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	12-41	35-43	1.25-1.50	0.20-0.60	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	41-80	20-30	1.30-1.55	0.20-0.60	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
856F:												
Stookey	0-9	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.43	.43	5	5	56
	9-60	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	60-80	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
Timula	0-22	10-18	1.30-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	22-60	10-18	1.40-1.60	0.60-2.00	0.18-0.20	0.0-2.9	0.2-0.5	.55	.55			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
856G:												
Stookey	0-9	12-22	1.10-1.45	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.43	.43	5	5	56
	9-60	18-27	1.20-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.5-1.0	.43	.43			
	60-80	10-24	1.20-1.50	0.60-2.00	0.18-0.20	3.0-5.9	0.0-0.5	.55	.55			
Timula	0-22	10-18	1.30-1.60	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	22-60	10-18	1.40-1.60	0.60-2.00	0.18-0.20	0.0-2.9	0.2-0.5	.55	.55			
864:												
Pits.												
871G:												
Lenzburg	0-5	27-35	1.30-1.60	0.60-2.00	0.17-0.22	3.0-5.9	0.5-4.0	.32	.32	5	4L	86
	5-38	20-35	1.40-1.70	0.20-0.60	0.11-0.17	3.0-5.9	0.2-1.0	.37	.43			
	38-60	25-45	1.40-1.70	0.20-0.60	0.08-0.18	6.0-8.9	0.2-1.0	.37	.43			
1070L:												
Beaucoup	0-15	27-35	1.15-1.35	0.20-0.60	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	7	38
	15-48	27-35	1.30-1.50	0.20-0.60	0.18-0.20	3.0-5.9	0.0-2.0	.32	.32			
	48-60	15-30	1.35-1.55	0.20-0.60	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	60-80	10-30	1.40-1.65	0.20-0.60	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
3226A:												
Wirt	0-6	10-18	1.30-1.55	0.60-2.00	0.19-0.24	0.0-2.9	0.5-2.0	.37	.37	5	5	56
	6-12	7-18	1.40-1.55	0.60-2.00	0.11-0.20	0.0-2.9	0.0-1.0	.32	.37			
	12-60	4-18	1.45-1.60	0.60-6.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.28			
3331A:												
Haymond	0-7	10-20	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-69	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	0.5-2.0	.49	.49			
	69-80	5-26	1.30-1.50	0.60-2.00	0.14-0.22	0.0-2.9	0.0-1.0	.49	.49			
3333A:												
Wakeland	0-10	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	10-50	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	0.0-1.0	.55	.55			
	50-80	10-18	1.30-1.50	0.60-2.00	0.18-0.24	0.0-2.9	0.0-0.5	.49	.49			
3368L:												
Raveenwash	0-8	5-20	1.15-1.40	0.60-6.00	0.20-0.24	0.0-2.9	0.5-2.0	.43	.43	5	4L	86
	8-60	3-18	1.50-1.70	2.00-20.00	0.12-0.19	0.0-2.9	0.2-0.5	.37	.37			
3396A:												
Vesser	0-14	20-26	1.30-1.35	0.60-2.00	0.20-0.24	3.0-5.9	2.0-3.0	.32	.32	5	6	48
	14-26	18-22	1.35-1.40	0.60-2.00	0.18-0.22	3.0-5.9	1.0-2.0	.37	.37			
	26-80	30-35	1.40-1.45	0.60-2.00	0.17-0.21	3.0-5.9	0.0-1.0	.32	.32			
3451A:												
Lawson	0-14	10-27	1.20-1.55	0.60-2.00	0.22-0.24	0.0-2.9	3.0-7.0	.32	.32	5	5	56
	14-33	10-30	1.20-1.55	0.60-2.00	0.18-0.22	0.0-2.9	3.0-7.0	.32	.32			
	33-80	18-30	1.55-1.65	0.60-2.00	0.18-0.20	3.0-5.9	1.0-4.0	.49	.49			
3475A:												
Elsah	0-6	10-20	1.40-1.60	0.60-2.00	0.13-0.18	0.0-2.9	1.0-2.0	.32	.37	5	8	0
	6-29	8-18	1.30-1.50	0.60-2.00	0.08-0.17	0.0-2.9	0.0-0.5	.24	.28			
	29-60	5-18	1.50-1.75	2.00-20.00	0.05-0.10	0.0-2.9	0.0-0.5	.24	.28			
3634A:												
Blyton	0-10	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	10-80	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	0.5-2.0	.55	.55			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
3877L:												
Blake-------------------	0-14	22-27	1.25-1.30	0.60-2.00	0.20-0.22	3.0-5.9	1.0-3.0	.37	.37	5	4L	86
	14-60	22-35	1.25-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-1.0	.43	.43			
Slacwater---------------	0-12	15-30	1.35-1.65	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.37	.37	5	4L	86
	12-80	8-35	1.35-1.55	0.60-2.00	0.17-0.20	0.0-2.9	0.0-0.5	.32	.32			
8070A:												
Beaucoup----------------	0-15	27-35	1.15-1.35	0.20-0.60	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	7	38
	15-48	27-35	1.30-1.50	0.20-0.60	0.18-0.20	3.0-5.9	0.0-2.0	.32	.32			
	48-60	15-30	1.35-1.55	0.20-0.60	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	60-80	10-30	1.40-1.65	0.20-0.60	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
8073A:												
Ross--------------------	0-21	15-27	1.20-1.45	0.60-2.00	0.19-0.24	0.0-2.9	3.0-4.0	.32	.32	5	5	56
	21-48	18-32	1.20-1.50	0.60-2.00	0.16-0.22	0.0-2.9	1.0-3.0	.32	.32			
	48-75	5-25	1.35-1.60	0.60-6.00	0.05-0.18	0.0-2.9	0.5-2.0	.24	.28			
8077A:												
Huntsville--------------	0-32	18-27	1.15-1.35	0.60-2.00	0.22-0.24	3.0-5.9	3.0-4.0	.32	.32	5	6	48
	32-42	18-27	1.20-1.40	0.60-2.00	0.20-0.22	3.0-5.9	0.2-0.5	.32	.32			
	42-80	10-25	1.20-1.50	0.60-2.00	0.17-0.21	0.0-2.9	0.2-1.0	.49	.49			
8092A:												
Sarpy-------------------	0-9	2-5	1.20-1.50	6.00-20.00	0.05-0.09	0.0-2.9	0.5-1.0	.02	.02	5	1	220
	9-60	2-5	1.20-1.50	6.00-20.00	0.05-0.09	0.0-2.9	0.5-1.0	.15	.15			
8162A:												
Gorham------------------	0-10	27-39	1.30-1.50	0.20-0.60	0.13-0.20	3.0-5.9	4.0-5.0	.28	.28	5	4	86
	10-40	27-42	1.35-1.55	0.20-0.60	0.11-0.18	3.0-5.9	0.0-1.0	.32	.32			
	40-44	10-30	1.40-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	44-60	5-15	1.50-1.75	2.00-20.00	0.05-0.13	0.0-2.9	0.0-0.5	.02	.02			
8180A:												
Dupo--------------------	0-7	12-18	1.25-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	7-36	10-18	1.30-1.50	0.60-2.00	0.20-0.22	0.0-2.9	0.0-0.5	.55	.55			
	36-85	35-55	1.35-1.60	0.06-0.20	0.08-0.19	6.0-8.9	0.0-1.0	.28	.28			
8217A:												
Twomile-----------------	0-10	10-18	1.35-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	10-26	10-18	1.35-1.45	0.60-2.00	0.22-0.24	0.0-2.9	0.5-1.0	.37	.37			
	26-58	25-35	1.30-1.40	0.06-0.20	0.08-0.10	3.0-5.9	0.0-0.5	.49	.49			
	58-80	12-35	1.30-1.50	0.20-0.60	0.12-0.16	3.0-5.9	0.0-0.5	.49	.49			
8284A:												
Tice--------------------	0-14	27-35	1.25-1.45	0.60-2.00	0.21-0.24	3.0-5.9	2.0-4.0	.28	.28	5	7	38
	14-80	24-35	1.30-1.50	0.60-2.00	0.18-0.21	3.0-5.9	0.0-1.0	.32	.32			
8333A:												
Wakeland----------------	0-10	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	10-50	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	0.0-1.0	.55	.55			
	50-80	10-18	1.30-1.50	0.60-2.00	0.18-0.24	0.0-2.9	0.0-0.5	.49	.49			
8349B:												
Zumbro------------------	0-11	5-18	1.35-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.17	.17	5	3	86
	11-33	2-10	1.45-1.55	6.00-20.00	0.10-0.12	0.0-2.9	1.0-2.0	.02	.02			
	33-42	0-10	1.45-1.60	6.00-20.00	0.06-0.11	0.0-2.9	0.0-2.0	.02	.02			
	42-80	0-5	1.55-1.65	6.00-20.00	0.02-0.07	0.0-2.9	0.0-1.0	.02	.02			
8396A:												
Vesser------------------	0-14	20-26	1.30-1.35	0.60-2.00	0.20-0.24	3.0-5.9	2.0-3.0	.32	.32	5	6	48
	14-26	18-22	1.35-1.40	0.60-2.00	0.18-0.22	3.0-5.9	1.0-2.0	.37	.37			
	26-80	30-35	1.40-1.45	0.60-2.00	0.17-0.21	3.0-5.9	0.0-1.0	.32	.32			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
8404A:												
Titus-------------------	0-13	35-40	1.30-1.50	0.06-0.20	0.18-0.22	6.0-8.9	2.0-4.0	.28	.28	5	4	86
	13-68	35-45	1.30-1.60	0.06-0.20	0.11-0.22	6.0-8.9	0.2-1.0	.32	.32			
	68-80	20-30	1.45-1.75	0.20-0.60	0.10-0.20	3.0-5.9	0.2-0.5	.32	.32			
8451A:												
Lawson------------------	0-14	10-27	1.20-1.55	0.60-2.00	0.22-0.24	0.0-2.9	3.0-7.0	.32	.32	5	5	56
	14-33	10-30	1.20-1.55	0.60-2.00	0.18-0.22	0.0-2.9	3.0-7.0	.32	.32			
	33-80	18-30	1.55-1.65	0.60-2.00	0.18-0.20	3.0-5.9	1.0-4.0	.49	.49			
8452A:												
Riley-------------------	0-13	27-35	1.15-1.35	0.60-2.00	0.17-0.23	3.0-5.9	3.0-4.0	.28	.28	4	7	38
	13-27	24-35	1.25-1.45	0.60-2.00	0.16-0.20	3.0-5.9	0.5-2.0	.32	.32			
	27-60	2-10	1.65-1.80	6.00-20.00	0.05-0.10	0.0-2.9	0.0-1.0	.02	.02			
8634A:												
Blyton------------------	0-11	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	11-25	10-18	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	0.5-2.0	.55	.55			
	25-64	10-18	1.30-1.50	0.60-2.00	0.18-0.24	0.0-2.9	0.5-1.0	.49	.49			
W:												
Water.												

Table 20.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
6B2:					
Fishhook-------------	0-7	14-22	---	5.1-7.3	0
	7-25	16-23	---	4.5-7.3	0
	25-49	21-29	---	4.5-7.8	0-25
	49-80	21-29	---	6.1-8.4	0-25
6C2:					
Fishhook-------------	0-5	14-22	---	5.1-7.3	0
	5-22	16-23	---	4.5-7.3	0
	22-55	21-29	---	4.5-7.8	0-25
	55-80	21-29	---	6.1-8.4	0-25
6C3:					
Fishhook-------------	0-3	17-23	---	5.1-7.3	0
	3-27	16-23	---	4.5-7.3	0
	27-68	21-29	---	4.5-7.8	0-25
	68-82	21-29	---	6.1-8.4	0-25
6D2:					
Fishhook-------------	0-5	14-22	---	5.1-7.3	0
	5-22	16-23	---	4.5-7.3	0
	22-68	21-29	---	4.5-7.8	0-25
	68-82	21-29	---	6.1-8.4	0-25
6D3:					
Fishhook-------------	0-3	17-23	---	5.1-7.3	0
	3-27	16-23	---	4.5-7.3	0
	27-68	21-29	---	4.5-7.8	0-25
	68-82	21-29	---	6.1-8.4	0-25
7C2:					
Atlas----------------	0-13	14-22	---	4.5-7.3	0
	13-37	21-29	---	4.5-7.3	0
	37-61	18-29	---	4.5-7.8	0-25
	61-80	12-20	---	6.1-7.8	0-25
7C3:					
Atlas----------------	0-5	19-26	---	4.5-7.3	0
	5-20	21-29	---	4.5-7.3	0
	20-43	18-29	---	4.5-7.8	0-25
	43-80	12-20	---	6.1-7.8	0-25
8E2:					
Hickory--------------	0-10	14-19	---	4.5-7.3	0
	10-53	16-22	---	4.5-7.3	0
	53-58	9.0-19	---	5.1-7.8	0-15
	58-63	5.0-15	---	5.6-8.4	0-25
8F:					
Hickory--------------	0-12	14-19	---	4.5-7.3	0
	12-53	16-22	---	4.5-7.3	0
	53-58	9.0-19	---	5.1-7.8	0-15
	58-63	5.0-15	---	5.6-8.4	0-25

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
8G:					
Hickory----------------	0-4	14-19	---	4.5-7.3	0
	4-12	9.0-14	---	4.5-7.3	0
	12-53	16-22	---	4.5-7.3	0
	53-58	9.0-19	---	5.1-7.8	0-15
	58-63	5.0-15	---	5.6-8.4	0-25
16A:					
Rushville------------	0-7	4.0-17	---	4.5-7.3	0
	7-13	3.0-13	---	4.5-7.3	0
	13-32	20-33	---	4.5-6.5	0
	32-50	18-30	---	4.5-7.8	0
	50-80	10-20	---	5.6-8.4	0-15
17A:					
Keomah---------------	0-11	15-20	---	4.5-7.3	0
	11-18	15-20	---	4.5-7.3	0
	18-33	---	25-30	4.5-5.5	0
	33-80	15-20	---	5.1-7.3	0
17B:					
Keomah---------------	0-7	15-20	---	4.5-7.3	0
	7-11	15-20	---	4.5-7.3	0
	11-31	---	25-30	4.5-5.5	0
	31-80	15-20	---	5.1-7.3	0
37A:					
Worthen--------------	0-29	15-21	---	5.6-7.3	0
	29-64	11-14	---	5.6-7.8	0
	64-80	9.0-14	---	6.1-8.4	0-25
37B:					
Worthen--------------	0-24	15-21	---	5.6-7.3	0
	24-56	11-14	---	5.6-7.8	0
	56-80	9.0-14	---	6.1-8.4	0-25
50A:					
Virden---------------	0-16	24-30	---	5.6-7.8	0
	16-49	21-27	---	5.6-7.8	0
	49-60	15-20	---	5.6-8.4	0-25
75A:					
Drury----------------	0-13	8.0-16	---	5.6-8.4	0-25
	13-50	11-15	---	5.6-7.3	0
	50-80	9.0-12	---	5.6-7.8	0-15
75B:					
Drury----------------	0-13	8.0-16	---	5.6-8.4	0-25
	13-50	11-15	---	5.6-7.3	0
	50-80	9.0-12	---	5.6-7.8	0-15
75C2:					
Drury----------------	0-6	8.0-16	---	5.6-8.4	0-25
	6-31	11-15	---	5.6-7.3	0
	31-80	9.0-12	---	5.6-7.8	0-15
79B:					
Menfro---------------	0-8	10-16	---	5.1-7.3	0
	8-14	15-20	---	5.1-7.3	0
	14-40	15-20	---	5.1-7.3	0
	40-80	5.0-10	---	5.1-7.3	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
79C2:					
Menfro	0-8	10-16	---	5.1-7.3	0
	8-55	15-20	---	5.1-7.3	0
	55-80	5.0-10	---	5.1-7.3	0
79C3:					
Menfro	0-4	16-20	---	5.1-7.3	0
	4-55	15-20	---	5.1-7.3	0
	55-60	5.0-10	---	5.1-7.3	0
79D2:					
Menfro	0-8	10-16	---	5.1-7.3	0
	8-55	15-20	---	5.1-7.3	0
	55-80	5.0-10	---	5.1-7.3	0
79D3:					
Menfro	0-4	16-20	---	5.1-7.3	0
	4-55	15-20	---	5.1-7.3	0
	55-60	5.0-10	---	5.1-7.3	0
81A:					
Littleton	0-9	11-28	---	5.6-7.8	0
	9-32	11-29	---	5.6-7.8	0
	32-60	11-23	---	5.6-7.8	0
86B:					
Osco	0-12	18-25	---	5.1-7.3	0
	12-36	15-23	---	5.1-7.3	0
	36-60	12-18	---	5.6-7.3	0
88B:					
Sparta	0-23	2.0-12	---	5.1-7.3	0
	23-34	1.0-6.0	---	5.1-7.3	0
	34-60	1.0-4.0	---	5.1-7.8	0
90A:					
Bethalto	0-8	16-24	---	5.6-7.3	0
	8-14	10-18	---	5.1-7.3	0
	14-63	15-28	---	5.1-7.8	0
	63-80	12-20	---	5.6-8.4	0-15
90B:					
Bethalto	0-7	16-24	---	5.6-7.3	0
	7-12	10-18	---	5.1-7.3	0
	12-63	15-28	---	5.1-7.8	0
	63-80	12-20	---	5.6-8.4	0-15
111A:					
Rubio	0-9	20-25	---	5.1-7.3	0
	9-16	15-20	---	5.1-6.0	0
	16-55	25-30	---	5.1-6.5	0
	55-74	20-25	---	5.1-7.3	0
175F:					
Lamont	0-3	10-15	---	5.1-7.3	0
	3-6	10-15	---	5.1-7.3	0
	6-80	10-15	---	5.1-7.3	0
175G:					
Lamont	0-3	10-15	---	5.1-7.3	0
	3-6	10-15	---	5.1-7.3	0
	6-80	10-15	---	5.1-7.3	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
216B:					
Stookey--------------	0-10	14-22	---	4.5-7.3	0
	10-65	12-18	---	4.5-6.5	0
	65-80	8.0-16	---	5.6-8.4	0-5
216C2:					
Stookey--------------	0-8	14-22	---	4.5-7.3	0
	8-40	12-18	---	4.5-6.5	0
	40-60	8.0-16	---	5.6-8.4	0-5
216C3:					
Stookey--------------	0-5	14-22	---	4.5-7.3	0
	5-50	12-18	---	4.5-6.5	0
	50-60	8.0-16	---	5.6-8.4	0-5
216D2:					
Stookey--------------	0-8	14-22	---	4.5-7.3	0
	8-40	12-18	---	4.5-6.5	0
	40-60	8.0-16	---	5.6-8.4	0-5
216D3:					
Stookey--------------	0-5	14-22	---	4.5-7.3	0
	5-50	12-18	---	4.5-6.5	0
	50-60	8.0-16	---	5.6-8.4	0-5
257A:					
Clarksdale-----------	0-8	10-22	---	5.1-7.3	0
	8-16	9.0-18	---	5.1-7.3	0
	16-47	21-28	---	5.1-7.3	0
	47-67	12-19	---	6.1-8.4	0-15
	67-80	12-18	---	6.1-8.4	0-15
257B:					
Clarksdale-----------	0-7	10-22	---	5.1-7.3	0
	7-12	9.0-18	---	5.1-6.5	0
	12-57	21-28	---	5.1-7.3	0
	57-62	12-19	---	6.1-8.4	0-15
	62-80	12-18	---	6.1-8.4	0-15
264C2:					
El Dara--------------	0-6	8.0-18	---	4.5-7.8	0
	6-66	11-21	---	4.5-7.3	0
	66-80	---	3.0-15	4.5-6.0	0
264D2:					
El Dara--------------	0-6	8.0-18	---	4.5-7.8	0
	6-66	11-21	---	4.5-7.3	0
	66-80	---	3.0-15	4.5-6.0	0
264D3:					
El Dara--------------	0-3	8.0-18	---	4.5-7.8	0
	3-47	11-21	---	4.5-7.3	0
	47-60	---	3.0-15	4.5-6.0	0
264E2:					
El Dara--------------	0-4	8.0-21	---	4.5-7.8	0
	4-7	3.0-13	---	4.5-7.3	0
	7-45	11-21	---	4.5-7.3	0
	45-60	---	3.0-15	4.5-6.0	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	meq/100 g	pH	Pct
264G:					
El Dara	0-5	8.0-21	---	4.5-7.8	0
	5-8	3.0-13	---	4.5-7.3	0
	8-45	11-21	---	4.5-7.3	0
	45-60	---	3.0-15	4.5-6.0	0
267A:					
Caseyville	0-9	16-24	---	5.1-7.3	0
	9-16	10-18	---	4.5-6.5	0
	16-50	15-28	---	4.5-6.5	0
	50-60	12-20	---	5.6-7.8	0-15
267B:					
Caseyville	0-7	16-24	---	5.1-7.3	0
	7-12	10-18	---	4.5-6.5	0
	12-50	15-28	---	4.5-6.5	0
	50-60	12-20	---	5.6-7.8	0-15
271C2:					
Timula	0-22	8.0-15	---	6.1-7.8	0-5
	22-60	6.0-12	---	7.4-8.4	5-35
271D2:					
Timula	0-22	8.0-15	---	6.1-7.8	0-5
	22-60	6.0-12	---	7.4-8.4	5-35
279B:					
Rozetta	0-7	10-22	---	5.1-7.3	0
	7-11	7.0-17	---	4.5-7.3	0
	11-55	16-22	---	4.5-6.0	0
	55-60	12-17	---	5.6-7.8	0-15
279C2:					
Rozetta	0-6	10-22	---	5.1-7.3	0
	6-46	16-22	---	4.5-6.0	0
	46-60	12-17	---	5.6-7.8	0-15
279C3:					
Rozetta	0-3	16-20	---	5.1-7.3	0
	3-46	15-20	---	4.5-6.5	0
	46-60	5.0-10	---	5.6-7.8	0-15
283B:					
Downsouth	0-11	15-25	---	5.1-7.3	0
	11-73	20-28	---	5.1-7.3	0
	73-80	12-20	---	5.6-7.8	0-15
283C2:					
Downsouth	0-7	15-25	---	5.1-7.3	0
	7-60	20-28	---	5.1-7.3	0
	60-80	12-20	---	5.6-7.8	0-15
337A:					
Creal	0-9	14-22	---	5.1-7.3	0
	9-19	11-16	---	4.5-7.3	0
	19-80	15-22	---	4.5-6.5	0
384A:					
Edwardsville	0-18	20-30	---	5.6-7.3	0
	18-60	20-30	---	5.1-7.8	0
	60-80	12-20	---	5.6-7.8	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
384B:					
Edwardsville---------	0-12	20-30	---	5.6-7.3	0
	12-60	20-30	---	5.1-7.8	0
	60-80	12-20	---	5.6-7.8	0-15
441B:					
Wakenda--------------	0-16	12-22	---	5.6-7.3	0
	16-76	20-30	---	5.6-7.3	0
	76-80	10-20	---	5.6-7.3	0
470B2:					
Keller---------------	0-9	18-26	---	5.6-7.8	0
	9-28	16-22	---	5.1-7.3	0
	28-60	18-25	---	5.1-7.8	0
	60-80	18-25	---	5.1-7.8	0
470C:					
Keller---------------	0-15	18-26	---	5.6-7.8	0
	15-24	16-22	---	5.1-7.3	0
	24-80	18-25	---	5.1-7.8	0
470C2:					
Keller---------------	0-9	18-26	---	5.6-7.8	0
	9-28	16-22	---	5.1-7.3	0
	28-60	18-25	---	5.1-7.8	0
	60-80	18-25	---	5.1-7.8	0
472C2:					
Baylis---------------	0-7	13-22	---	5.6-6.5	0
	7-24	16-22	---	4.5-6.5	0
	24-80	21-25	---	4.5-7.3	0
472D2:					
Baylis---------------	0-7	13-22	---	5.6-6.5	0
	7-24	16-22	---	4.5-6.5	0
	24-80	21-25	---	4.5-7.3	0
472E2:					
Baylis---------------	0-7	13-22	---	5.6-6.5	0
	7-24	16-22	---	4.5-6.5	0
	24-80	21-25	---	4.5-7.3	0
477B:					
Winfield-------------	0-8	10-15	---	5.6-7.3	0
	8-13	12-17	---	5.6-7.3	0
	13-33	13-18	---	4.5-6.5	0
	33-60	10-14	---	5.1-6.5	0
477C2:					
Winfield-------------	0-6	10-15	---	5.6-7.3	0
	6-50	13-18	---	4.5-6.5	0
	50-60	10-14	---	5.1-6.5	0
477C3:					
Winfield-------------	0-3	14-17	---	5.6-7.3	0
	3-50	13-18	---	4.5-6.5	0
	50-60	10-14	---	5.1-6.5	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
515B2:					
Bunkum---------------	0-7	17-23	---	5.1-7.3	0
	7-50	18-24	---	4.5-6.5	0
	50-65	12-22	---	5.1-7.3	0
	65-80	10-20	---	5.1-7.3	0
515C2:					
Bunkum---------------	0-7	17-23	---	5.1-7.3	0
	7-50	18-24	---	4.5-6.5	0
	50-65	12-22	---	5.1-7.3	0
	65-85	10-20	---	5.1-7.3	0
515C3:					
Bunkum---------------	0-3	17-23	---	5.1-7.3	0
	3-50	18-24	---	4.5-6.5	0
	50-65	12-22	---	5.1-7.3	0
	65-80	10-20	---	5.1-7.3	0
515D2:					
Bunkum---------------	0-7	17-23	---	5.1-7.3	0
	7-50	18-24	---	4.5-6.5	0
	50-65	12-22	---	5.1-7.3	0
	65-85	10-20	---	5.1-7.3	0
515D3:					
Bunkum---------------	0-3	17-23	---	5.1-7.3	0
	3-50	18-24	---	4.5-6.5	0
	50-65	12-22	---	5.1-7.3	0
	65-80	10-20	---	5.1-7.3	0
538B2:					
Emery----------------	0-7	16-24	---	5.1-7.3	0
	7-37	10-18	---	5.1-6.5	0
	37-55	15-22	---	5.1-6.5	0
	55-87	11-17	---	6.1-8.4	0-15
538C2:					
Emery----------------	0-7	16-24	---	5.1-7.3	0
	7-37	10-18	---	5.1-6.5	0
	37-55	15-22	---	5.1-6.5	0
	55-87	11-17	---	6.1-8.4	0-15
549D2:					
Marseilles-----------	0-5	14-22	---	5.1-6.5	0
	5-27	---	16-27	4.5-6.5	0
	27-60	---	---	---	---
549D3:					
Marseilles-----------	0-3	17-23	---	5.1-6.5	0
	3-27	---	16-27	4.5-6.5	0
	27-60	---	---	---	---
549F:					
Marseilles-----------	0-10	14-22	---	5.1-6.5	0
	10-35	---	16-27	4.5-6.5	0
	35-60	---	---	---	---
549G:					
Marseilles-----------	0-10	14-22	---	5.1-6.5	0
	10-35	---	16-27	4.5-6.5	0
	35-60	---	---	---	---

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
559F:					
Lindley--------------	0-12	10-16	---	4.5-7.3	0
	12-58	15-20	---	4.5-6.5	0
	58-80	10-16	---	6.1-7.8	0
559G:					
Lindley--------------	0-12	10-16	---	4.5-7.3	0
	12-58	15-20	---	4.5-6.5	0
	58-80	10-16	---	6.1-7.8	0
606F:					
Goss-----------------	0-7	6.0-15	---	4.5-6.5	0
	7-11	---	10-15	4.5-6.0	0
	11-80	---	18-40	4.5-6.0	0
606G:					
Goss-----------------	0-7	6.0-15	---	4.5-6.5	0
	7-11	---	10-15	4.5-6.0	0
	11-80	---	18-40	4.5-6.0	0
629C2:					
Crider---------------	0-8	10-16	---	5.1-7.3	0
	8-35	15-20	---	5.1-7.3	0
	35-72	21-25	---	4.5-6.5	0
629D2:					
Crider---------------	0-8	10-16	---	5.1-7.3	0
	8-35	15-20	---	5.1-7.3	0
	35-72	21-25	---	4.5-6.5	0
651C2:					
Keswick--------------	0-8	20-25	---	4.5-7.3	0
	8-47	---	30-50	4.5-6.0	0
	47-60	30-36	---	4.5-7.8	0-15
651C3:					
Keswick--------------	0-5	25-30	---	4.5-7.3	0
	5-32	---	30-50	4.5-6.0	0
	32-60	30-36	---	4.5-7.8	0-15
651D2:					
Keswick--------------	0-8	20-25	---	4.5-7.3	0
	8-47	---	30-50	4.5-6.0	0
	47-60	30-36	---	4.5-7.8	0-15
651D3:					
Keswick--------------	0-5	25-30	---	4.5-7.3	0
	5-32	---	30-50	4.5-6.0	0
	32-60	30-36	---	4.5-7.8	0-15
651E2:					
Keswick--------------	0-8	20-25	---	4.5-7.3	0
	8-47	30-50	---	4.5-6.5	0
	47-60	30-36	---	4.5-7.8	0-15
652C2:					
Passport-------------	0-5	11-22	---	5.1-7.3	0
	5-45	11-23	---	4.5-7.3	0
	45-84	15-22	---	5.1-7.3	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
652C3:					
Passport	0-3	17-23	---	5.1-7.3	0
	3-35	11-23	---	4.5-7.3	0
	35-80	15-22	---	5.1-7.3	0
655C2:					
Ursa	0-10	11-22	---	4.5-7.3	0
	10-56	21-27	---	4.5-7.3	0
	56-80	15-27	---	5.6-8.4	0-5
655C3:					
Ursa	0-4	22-26	---	4.5-7.3	0
	4-45	21-27	---	4.5-7.3	0
	45-60	15-27	---	5.6-8.4	0-5
655D2:					
Ursa	0-6	11-22	---	4.5-7.3	0
	6-56	21-27	---	4.5-7.3	0
	56-80	15-27	---	5.6-8.4	0-5
655D3:					
Ursa	0-4	22-26	---	4.5-7.3	0
	4-45	21-27	---	4.5-7.3	0
	45-60	15-27	---	5.6-8.4	0-5
660C2:					
Coatsburg	0-10	18-26	---	5.1-7.8	0
	10-80	21-29	---	5.1-6.5	0
671A:					
Biggsville	0-13	19-29	---	5.1-8.4	0
	13-53	14-22	---	5.6-7.3	0
	53-80	11-20	---	5.6-8.4	0
671B:					
Biggsville	0-13	19-29	---	5.1-8.4	0
	13-53	14-22	---	5.6-7.3	0
	53-80	11-20	---	5.6-8.4	0
675B:					
Greenbush	0-14	20-25	---	5.1-7.3	0
	14-60	25-30	---	4.5-7.3	0
	60-80	20-25	---	5.6-7.3	0
675C2:					
Greenbush	0-6	20-25	---	5.1-7.3	0
	6-46	25-30	---	4.5-7.3	0
	46-60	20-25	---	5.6-7.3	0
678A:					
Mannon	0-7	10-18	---	5.6-7.3	0
	7-12	10-16	---	5.6-7.3	0
	12-59	10-18	---	5.1-7.3	0
	59-80	10-15	---	5.6-8.4	0-30
678B:					
Mannon	0-7	10-18	---	5.6-7.3	0
	7-10	10-16	---	5.6-7.3	0
	10-59	10-18	---	5.1-7.3	0
	59-80	10-15	---	5.6-8.4	0-30

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
785G:					
Lacrescent	0-21	15-27	---	6.6-7.8	0-5
	21-38	5.0-16	---	6.6-8.4	0-5
	38-60	4.0-11	---	7.4-8.4	0-5
801B:					
Orthents	0-80	10-25	---	5.1-7.8	0-10
816B:					
Stookey	0-11	14-22	---	4.5-7.3	0
	11-43	12-18	---	4.5-6.5	0
	43-60	8.0-16	---	5.6-8.4	0-5
Timula	0-22	8.0-15	---	6.1-7.8	0-5
	22-60	6.0-12	---	7.4-8.4	5-35
Orthents	0-80	10-25	---	5.1-7.8	0-10
816D:					
Stookey	0-11	14-22	---	4.5-7.3	0
	11-43	12-18	---	4.5-6.5	0
	43-60	8.0-16	---	5.6-8.4	0-5
Timula	0-22	8.0-15	---	6.1-7.8	0-5
	22-60	6.0-12	---	7.4-8.4	5-35
Orthents	0-80	10-25	---	5.1-7.8	0-10
829B:					
Biggsville	0-13	19-29	---	5.1-8.4	0
	13-53	14-22	---	5.6-7.3	0
	53-80	11-20	---	5.6-8.4	0
Mannon	0-9	10-18	---	5.6-7.3	0
	9-49	10-18	---	5.1-7.3	0
	49-60	10-15	---	5.6-8.4	0-30
855A:					
Timewell	0-18	18-24	---	5.1-7.3	0
	18-40	---	21-25	4.5-6.0	0
	40-67	15-25	---	5.6-7.3	0
	67-80	12-18	---	5.6-8.4	0-10
Ipava	0-14	20-27	---	5.6-7.3	0
	14-41	22-27	---	5.6-7.8	0
	41-80	12-19	---	5.6-8.4	0-20
855B:					
Timewell	0-16	18-24	---	5.1-7.3	0
	16-36	---	21-25	4.5-6.0	0
	36-59	15-25	---	5.6-7.3	0
	59-70	12-18	---	5.6-8.4	0-10
Ipava	0-12	20-27	---	5.6-7.3	0
	12-41	22-27	---	5.6-7.8	0
	41-80	12-19	---	5.6-8.4	0-20

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	meq/100 g	pH	Pct
856F:					
Stookey	0-9	14-22	---	4.5-7.3	0
	9-60	12-18	---	4.5-6.5	0
	60-80	8.0-16	---	5.6-8.4	0-5
Timula	0-22	8.0-15	---	6.1-7.8	0-5
	22-60	6.0-12	---	7.4-8.4	5-35
856G:					
Stookey	0-9	14-22	---	4.5-7.3	0
	9-60	12-18	---	4.5-6.5	0
	60-80	8.0-16	---	5.6-8.4	0-5
Timula	0-22	8.0-15	---	6.1-7.8	0-5
	22-60	6.0-12	---	7.4-8.4	5-35
864:					
Pits.					
871G:					
Lenzburg	0-5	17-29	---	6.6-8.4	0-20
	5-38	12-23	---	6.6-8.4	0-25
	38-60	15-29	---	7.4-8.4	0-26
1070L:					
Beaucoup	0-15	26-33	---	5.6-7.8	0
	15-48	16-25	---	5.6-7.8	0
	48-60	9.0-20	---	6.1-7.8	0-5
	60-80	6.0-20	---	6.1-8.4	0-25
3226A:					
Wirt	0-6	6.0-13	---	5.6-7.3	0
	6-12	4.0-12	---	5.6-7.3	0
	12-60	3.0-12	---	5.6-7.3	0
3331A:					
Haymond	0-7	4.0-15	---	5.6-7.8	0
	7-69	10-16	---	5.6-7.8	0
	69-80	3.0-16	---	6.1-7.8	0
3333A:					
Wakeland	0-10	4.0-12	---	5.6-7.3	0
	10-50	4.0-12	---	5.6-7.8	0
	50-80	4.0-12	---	5.6-7.8	0
3368L:					
Raveenwash	0-8	4.0-16	---	7.4-8.4	0-10
	8-60	2.0-12	---	7.4-8.4	0-30
3396A:					
Vesser	0-14	25-30	---	5.6-7.3	0
	14-26	20-25	---	5.1-6.5	0
	26-80	25-30	---	5.1-6.5	0
3451A:					
Lawson	0-14	11-28	---	6.1-7.8	0
	14-33	11-29	---	6.1-7.8	0
	33-80	11-23	---	6.1-7.8	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
3475A:					
Elsah	0-6	8.0-16	---	5.6-7.3	0
	6-29	5.0-12	---	5.6-7.8	0
	29-60	3.0-12	---	6.6-7.8	0
3634A:					
Blyton	0-10	4.0-12	---	5.6-7.3	0
	10-80	4.0-12	---	5.6-7.8	0
3877L:					
Blake	0-14	20-25	---	7.4-8.4	5-30
	14-60	20-30	---	7.4-8.4	5-30
Slacwater	0-12	10-20	---	7.4-8.4	0-10
	12-80	5.0-22	---	7.4-8.4	0-30
8070A:					
Beaucoup	0-15	26-33	---	5.6-7.8	0
	15-48	16-25	---	5.6-7.8	0
	48-60	9.0-20	---	6.1-7.8	0-5
	60-80	6.0-20	---	6.1-8.4	0-25
8073A:					
Ross	0-21	12-26	---	6.1-7.8	0
	21-48	8.0-20	---	6.1-8.4	0-20
	48-75	2.0-15	---	6.1-8.4	0-30
8077A:					
Huntsville	0-32	17-24	---	5.6-7.8	0
	32-42	11-17	---	5.6-7.8	0
	42-80	6.0-17	---	5.6-7.8	0-5
8092A:					
Sarpy	0-9	2.0-6.0	---	6.6-8.4	0-2
	9-60	2.0-6.0	---	6.6-8.4	0-2
8162A:					
Gorham	0-10	24-35	---	5.1-7.8	0
	10-40	16-26	---	6.1-7.8	0
	40-44	6.0-19	---	6.1-7.8	0
	44-60	3.0-10	---	6.1-7.8	0-10
8180A:					
Dupo	0-7	8.0-15	---	5.6-7.8	0
	7-36	6.0-12	---	5.6-7.8	0
	36-85	21-29	---	5.6-7.8	0-5
8217A:					
Twomile	0-10	6.0-12	---	4.5-7.3	0
	10-26	6.0-12	---	4.5-7.3	0
	26-58	12-22	---	4.5-6.5	0
	58-80	6.0-22	---	4.5-7.3	0
8284A:					
Tice	0-14	20-27	---	6.1-7.8	0
	14-80	16-23	---	5.1-7.3	0
8333A:					
Wakeland	0-10	4.0-12	---	5.6-7.3	0
	10-50	4.0-12	---	5.6-7.8	0
	50-80	4.0-12	---	5.6-7.8	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
8349B:					
Zumbro---------------	0-11	7.0-17	---	5.6-7.8	0-5
	11-33	3.0-13	---	5.6-7.8	0-5
	33-42	0.0-9.0	---	6.1-7.8	1-5
	42-80	0.0-7.0	---	6.1-7.8	1-5
8396A:					
Vesser---------------	0-14	25-30	---	5.6-7.3	0
	14-26	20-25	---	5.1-6.5	0
	26-80	25-30	---	5.1-6.5	0
8404A:					
Titus----------------	0-13	25-32	---	6.1-7.3	0
	13-68	21-29	---	6.1-7.8	0
	68-80	12-19	---	6.1-7.8	0-5
8451A:					
Lawson---------------	0-14	11-28	---	6.1-7.8	0
	14-33	11-29	---	6.1-7.8	0
	33-80	11-23	---	6.1-7.8	0
8452A:					
Riley----------------	0-13	21-29	---	5.6-7.8	0
	13-27	10-25	---	5.6-7.8	0
	27-60	1.0-10	---	5.6-8.4	0-20
8634A:					
Blyton---------------	0-11	4.0-12	---	5.6-7.3	0
	11-25	4.0-12	---	5.6-7.8	0
	25-64	4.0-12	---	5.6-7.8	0
W:					
Water.					

Table 21.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro-logic group	Months	High water table			Ponding			Flooding	
			Upper limit	Lower limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
6B2:										
Fishhook--------	D	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
6C2:										
Fishhook--------	D	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
6C3:										
Fishhook--------	D	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
6D2:										
Fishhook--------	D	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
6D3:										
Fishhook--------	D	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
7C2:										
Atlas-----------	D	Jan-May	0.5-1.5	1.0-2.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
7C3:										
Atlas-----------	D	Jan-May	0.5-1.5	1.0-2.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
8E2:										
Hickory---------	B	Jan-Dec	---	---	---	---	---	---	---	---
8F:										
Hickory---------	B	Jan-Dec	---	---	---	---	---	---	---	---
8G:										
Hickory---------	B	Jan-Dec	---	---	---	---	---	---	---	---
16A:										
Rushville-------	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
17A:										
Keomah----------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
17B:										
Keomah----------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
37A:										
Worthen---------	B	Jan-Dec	---	---	---	---	---	---	---	---
37B:										
Worthen---------	B	Jan-Dec	---	---	---	---	---	---	---	---
50A:										
Virden----------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
75A:										
Drury-----------	B	Jan-Dec	---	---	---	---	---	---	---	---
75B:										
Drury-----------	B	Jan-Dec	---	---	---	---	---	---	---	---
75C2:										
Drury-----------	B	Jan-Dec	---	---	---	---	---	---	---	---
79B:										
Menfro----------	B	Jan-Dec	---	---	---	---	---	---	---	---
79C2:										
Menfro----------	B	Jan-Dec	---	---	---	---	---	---	---	---
79C3:										
Menfro----------	B	Jan-Dec	---	---	---	---	---	---	---	---
79D2:										
Menfro----------	B	Jan-Dec	---	---	---	---	---	---	---	---
79D3:										
Menfro----------	B	Jan-Dec	---	---	---	---	---	---	---	---
81A:										
Littleton-------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
86B:										
Osco------------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
88B:										
Sparta----------	A	Jan-Dec	---	---	---	---	---	---	---	---
90A:										
Bethalto--------	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
90B:										
Bethalto--------	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
111A:										
Rubio-----------	C	Jan-May	0.0-1.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
175F:										
Lamont----------	B	Jan-Dec	---	---	---	---	---	---	---	---
175G:										
Lamont----------	B	Jan-Dec	---	---	---	---	---	---	---	---
216B:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---
216C2:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---
216C3:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
216D2:										
Stookey----------	B	Jan-Dec	---	---	---	---	---	---	---	---
216D3:										
Stookey----------	B	Jan-Dec	---	---	---	---	---	---	---	---
257A:										
Clarksdale-------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
257B:										
Clarksdale-------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
264C2:										
El Dara----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
264D2:										
El Dara----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
264D3:										
El Dara----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
264E2:										
El Dara----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
264G:										
El Dara----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
267A:										
Caseyville-------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
267B:										
Caseyville-------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
271C2:										
Timula-----------	B	Jan-Dec	---	---	---	---	---	---	---	---
271D2:										
Timula-----------	B	Jan-Dec	---	---	---	---	---	---	---	---
279B:										
Rozetta----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
279C2:										
Rozetta----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
279C3:										
Rozetta---------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
283B:										
Downsouth-------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
283C2:										
Downsouth-------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
337A:										
Creal-----------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
384A:										
Edwardsville----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
384B:										
Edwardsville----	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
441B:										
Wakenda---------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
470B2:										
Keller----------	C	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
470C:										
Keller----------	C	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
470C2:										
Keller----------	C	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
472C2:										
Baylis----------	B	Jan-Dec	---	---	---	---	---	---	---	---
472D2:										
Baylis----------	B	Jan-Dec	---	---	---	---	---	---	---	---
472E2:										
Baylis----------	B	Jan-Dec	---	---	---	---	---	---	---	---
477B:										
Winfield--------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
477C2:										
Winfield--------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
477C3:										
Winfield--------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
515B2:										
Bunkum----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
515C2:										
Bunkum----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
515C3:										
Bunkum----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
515D2:										
Bunkum----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
515D3:										
Bunkum----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
538B2:										
Emery-----------	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
538C2:										
Emery-----------	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
549D2:										
Marseilles------	B	Jan-Dec	---	---	---	---	---	---	---	---
549D3:										
Marseilles------	B	Jan-Dec	---	---	---	---	---	---	---	---
549F:										
Marseilles------	B	Jan-Dec	---	---	---	---	---	---	---	---
549G:										
Marseilles------	B	Jan-Dec	---	---	---	---	---	---	---	---
559F:										
Lindley---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
559G:										
Lindley---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
606F:										
Goss------------	B	Jan-Dec	---	---	---	---	---	---	---	---
606G:										
Goss------------	B	Jan-Dec	---	---	---	---	---	---	---	---
629C2:										
Crider----------	B	Jan-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
629D2:										
Crider----------	B	Jan-Dec	---	---	---	---	---	---	---	---
651C2:										
Keswick---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	3.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
651C3:										
Keswick---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	3.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
651D2:										
Keswick---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	3.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
651D3:										
Keswick---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	3.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
651E2:										
Keswick---------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	2.0-3.5	3.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
652C2:										
Passport--------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
652C3:										
Passport--------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
655C2:										
Ursa------------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
655C3:										
Ursa------------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
655D2:										
Ursa------------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
655D3:										
Ursa------------	C	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
660C2:										
Coatsburg-------	D	Jan-May	0.0-1.0	0.5-2.5	Perched	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
671A:										
Biggsville------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
671B:										
Biggsville------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
675B:										
Greenbush-------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
675C2:										
Greenbush-------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
678A:										
Mannon----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
678B:										
Mannon----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
785G:										
Lacrescent------	B	Jan-Dec	---	---	---	---	---	---	---	---
801B:										
Orthents--------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
816B:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---
Timula----------	B	Jan-Dec	---	---	---	---	---	---	---	---
Orthents--------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
816D:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---
Timula----------	B	Jan-Dec	---	---	---	---	---	---	---	---
Orthents--------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
829B:										
Biggsville------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---
Mannon----------	B	Jan	---	---	---	---	---	---	---	---
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
		May-Dec	---	---	---	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
855A:										
Timewell--------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
Ipava-----------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
855B:										
Timewell--------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
Ipava-----------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		Jun-Dec	---	---	---	---	---	---	---	---
856F:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---
Timula----------	B	Jan-Dec	---	---	---	---	---	---	---	---
856G:										
Stookey---------	B	Jan-Dec	---	---	---	---	---	---	---	---
Timula----------	B	Jan-Dec	---	---	---	---	---	---	---	---
864:										
Pits.										
871G:										
Lenzburg--------	B	Jan-Dec	---	---	---	---	---	---	---	---
1070L:										
Beaucoup--------	D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	---	Long--------	Occasional.
		Jul-Oct	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	---	---	---
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long------	---	Long--------	Occasional.
3226A:										
Wirt------------	B	Jan-Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.
3331A:										
Haymond---------	B	Jan-Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.
3333A:										
Wakeland--------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief-------	Frequent.
		Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.
3368L:										
Raveenwash------	A	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Long--------	Frequent.
		Jun	---	---	---	---	---	---	Long--------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Long--------	Frequent.
3396A:										
Vesser----------	C	Jan-May	0.0-1.0	>6.0	Apparent	---	---	---	Brief-------	Frequent.
		Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
3451A:										
Lawson----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief-------	Frequent.
		Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.
3475A:										
Elsah-----------	B	Jan-Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.
3634A:										
Blyton----------	B	Jan	---	---	---	---	---	---	Brief-------	Frequent.
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	Brief-------	Frequent.
		May-Jun	---	---	---	---	---	---	Brief-------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Frequent.
3877L:										
Blake-----------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Long--------	Frequent.
		Jun	---	---	---	---	---	---	Long--------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Long--------	Frequent.
Slacwater-------	D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Long------	---	Long--------	Frequent.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long------	---	Long--------	Frequent.
8070A:										
Beaucoup--------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8073A:										
Ross------------	B	Jan-Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8077A:										
Huntsville------	B	Jan-Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8092A:										
Sarpy-----------	A	Jan-Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8162A:										
Gorham----------	B	Jan-May	0.0-1.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8180A:										
Dupo------------	C	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	High water table: Upper limit	High water table: Lower limit	High water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
8217A:										
Twomile----------	C	Jan-May	0.0-1.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8284A:										
Tice------------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8333A:										
Wakeland--------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8349B:										
Zumbro----------	A	Jan-Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8396A:										
Vesser----------	C	Jan-May	0.0-1.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8404A:										
Titus-----------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief-----	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8451A:										
Lawson----------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8452A:										
Riley-----------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
8634A:										
Blyton----------	B	Jan	---	---	---	---	---	---	Brief-------	Occasional.
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	Brief-------	Occasional.
		May-Jun	---	---	---	---	---	---	Brief-------	Occasional.
		Jul-Oct	---	---	---	---	---	---	---	---
		Nov-Dec	---	---	---	---	---	---	Brief-------	Occasional.
W:										
Water.										

Table 22.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
6B2:					
Fishhook	---	>80	High	High	High.
6C2:					
Fishhook	---	>80	High	High	High.
6C3:					
Fishhook	---	>80	High	High	High.
6D2:					
Fishhook	---	>80	High	High	High.
6D3:					
Fishhook	---	>80	High	High	High.
7C2:					
Atlas	---	>80	High	High	Moderate.
7C3:					
Atlas	---	>80	High	High	Moderate.
8E2:					
Hickory	---	>80	Moderate	Moderate	Moderate.
8F:					
Hickory	---	>80	Moderate	Moderate	Moderate.
8G:					
Hickory	---	>80	Moderate	Moderate	Moderate.
16A:					
Rushville	---	>80	High	High	High.
17A:					
Keomah	---	>80	High	High	Moderate.
17B:					
Keomah	---	>80	High	High	Moderate.
37A:					
Worthen	---	>80	High	Low	Low.
37B:					
Worthen	---	>80	High	Low	Low.
50A:					
Virden	---	>80	High	High	Moderate.
75A:					
Drury	---	>80	High	Moderate	Moderate.
75B:					
Drury	---	>80	High	Moderate	Moderate.
75C2:					
Drury	---	>80	High	Moderate	Moderate.
79B:					
Menfro	---	>80	High	Low	Moderate.

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In			
79C2:					
Menfro	---	>80	High	Low	Moderate.
79C3:					
Menfro	---	>80	High	Low	Moderate.
79D2:					
Menfro	---	>80	High	Low	Moderate.
79D3:					
Menfro	---	>80	High	Low	Moderate.
81A:					
Littleton	---	>80	High	High	Low.
86B:					
Osco	---	>80	High	Moderate	Moderate.
88B:					
Sparta	---	>80	Low	Low	Moderate.
90A:					
Bethalto	---	>80	High	High	Moderate.
90B:					
Bethalto	---	>80	High	High	Moderate.
111A:					
Rubio	---	>80	High	High	Moderate.
175F:					
Lamont	---	>80	Moderate	Low	Moderate.
175G:					
Lamont	---	>80	Moderate	Low	Moderate.
216B:					
Stookey	---	>80	High	Low	High.
216C2:					
Stookey	---	>80	High	Low	High.
216C3:					
Stookey	---	>80	High	Low	High.
216D2:					
Stookey	---	>80	High	Low	High.
216D3:					
Stookey	---	>80	High	Low	High.
257A:					
Clarksdale	---	>80	High	High	Moderate.
257B:					
Clarksdale	---	>80	High	High	Moderate.
264C2:					
El Dara	---	>80	Moderate	Low	High.
264D2:					
El Dara	---	>80	Moderate	Low	High.

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In			
264D3:					
El Dara	---	>80	Moderate	Low	High.
264E2:					
El Dara	---	>80	Moderate	Low	High.
264G:					
El Dara	---	>80	Moderate	Low	High.
267A:					
Caseyville	---	>80	High	High	Moderate.
267B:					
Caseyville	---	>80	High	High	Moderate.
271C2:					
Timula	---	>80	High	Low	Low.
271D2:					
Timula	---	>80	High	Low	Low.
279B:					
Rozetta	---	>80	High	Moderate	Moderate.
279C2:					
Rozetta	---	>80	High	Moderate	Moderate.
279C3:					
Rozetta	---	>80	High	Moderate	Moderate.
283B:					
Downsouth	---	>80	High	Moderate	Moderate.
283C2:					
Downsouth	---	>80	High	Moderate	Moderate.
337A:					
Creal	---	>80	High	High	High.
384A:					
Edwardsville	---	>80	High	High	Moderate.
384B:					
Edwardsville	---	>80	High	High	Moderate.
441B:					
Wakenda	---	>80	High	Low	Moderate.
470B2:					
Keller	---	>80	High	High	Moderate.
470C:					
Keller	---	>80	High	High	Moderate.
470C2:					
Keller	---	>80	High	High	Moderate.
472C2:					
Baylis	---	>80	High	Moderate	High.
472D2:					
Baylis	---	>80	High	Moderate	High.

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In			
472E2:					
Baylis	---	>80	High	Moderate	High.
477B:					
Winfield	---	>80	High	Moderate	Moderate.
477C2:					
Winfield	---	>80	High	Moderate	Moderate.
477C3:					
Winfield	---	>80	High	Moderate	Moderate.
515B2:					
Bunkum	---	>80	High	High	High.
515C2:					
Bunkum	---	>80	High	High	High.
515C3:					
Bunkum	---	>80	High	High	High.
515D2:					
Bunkum	---	>80	High	High	High.
515D3:					
Bunkum	---	>80	High	High	High.
538B2:					
Emery	---	>80	High	High	Moderate.
538C2:					
Emery	---	>80	High	High	Moderate.
549D2:					
Marseilles	Bedrock (paralithic)	20-40	High	High	Moderate.
549D3:					
Marseilles	Bedrock (paralithic)	20-40	High	High	Moderate.
549F:					
Marseilles	Bedrock (paralithic)	20-40	High	High	Moderate.
549G:					
Marseilles	Bedrock (paralithic)	20-40	High	High	Moderate.
559F:					
Lindley	---	>80	Moderate	Moderate	Moderate.
559G:					
Lindley	---	>80	Moderate	Moderate	Moderate.
606F:					
Goss	---	>80	Moderate	Moderate	Moderate.
606G:					
Goss	---	>80	Moderate	Moderate	Moderate.
629C2:					
Crider	Bedrock (lithic)	60-100	None	Moderate	Moderate.

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
629D2:					
Crider	Bedrock (lithic)	60-100	None	Moderate	Moderate.
651C2:					
Keswick	---	>80	High	High	Moderate.
651C3:					
Keswick	---	>80	High	High	Moderate.
651D2:					
Keswick	---	>80	High	High	Moderate.
651D3:					
Keswick	---	>80	High	High	Moderate.
651E2:					
Keswick	---	>80	High	High	Moderate.
652C2:					
Passport	---	>80	Moderate	High	Moderate.
652C3:					
Passport	---	>80	Moderate	High	Moderate.
655C2:					
Ursa	---	>80	Moderate	High	Moderate.
655C3:					
Ursa	---	>80	Moderate	High	Moderate.
655D2:					
Ursa	---	>80	Moderate	High	Moderate.
655D3:					
Ursa	---	>80	Moderate	High	Moderate.
660C2:					
Coatsburg	---	>80	High	High	Moderate.
671A:					
Biggsville	---	>80	High	Low	Moderate.
671B:					
Biggsville	---	>80	High	Low	Moderate.
675B:					
Greenbush	---	>80	High	Moderate	Moderate.
675C2:					
Greenbush	---	>80	High	Moderate	Moderate.
678A:					
Mannon	---	>80	High	Moderate	Moderate.
678B:					
Mannon	---	>80	High	Moderate	Moderate.
785G:					
Lacrescent	---	>80	Moderate	Low	Low.
801B:					
Orthents	---	>80	High	High	Moderate.

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
816B:					
Stookey	---	>80	High	Low	High.
Timula	---	>80	High	Low	Low.
Orthents	---	>80	High	High	Moderate.
816D:					
Stookey	---	>80	High	Low	High.
Timula	---	>80	High	Low	Low.
Orthents	---	>80	High	High	Moderate.
829B:					
Biggsville	---	>80	High	Low	Moderate.
Mannon	---	>80	High	Moderate	Moderate.
855A:					
Timewell	---	>80	High	High	High.
Ipava	---	>80	High	High	Moderate.
855B:					
Timewell	---	>80	High	High	High.
Ipava	---	>80	High	High	Moderate.
856F:					
Stookey	---	>80	High	Low	High.
Timula	---	>80	High	Low	Low.
856G:					
Stookey	---	>80	High	Low	High.
Timula	---	>80	High	Low	Low.
864:					
Pits.					
871G:					
Lenzburg	---	>80	Moderate	Moderate	Low.
1070L:					
Beaucoup	---	>80	High	High	Low.
3226A:					
Wirt	---	>80	Moderate	Low	Moderate.
3331A:					
Haymond	---	>80	High	Low	Low.
3333A:					
Wakeland	---	>80	High	Moderate	Low.
3368L:					
Raveenwash	---	>80	High	Low	Low.
3396A:					
Vesser	---	>80	High	High	Moderate.

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
3451A:					
Lawson	---	>80	High	Moderate	Low.
3475A:					
Elsah	---	>80	Moderate	Low	Moderate.
3634A:					
Blyton	---	>80	High	Moderate	Low.
3877L:					
Blake	---	>80	High	High	Low.
Slacwater	---	>80	High	Low	Low.
8070A:					
Beaucoup	---	>80	High	High	Low.
8073A:					
Ross	---	>80	Moderate	Low	Low.
8077A:					
Huntsville	---	>80	High	Low	Low.
8092A:					
Sarpy	---	>80	Low	Low	Low.
8162A:					
Gorham	---	>80	High	High	Low.
8180A:					
Dupo	---	>80	High	High	Moderate.
8217A:					
Twomile	---	>80	High	High	High.
8284A:					
Tice	---	>80	High	High	Low.
8333A:					
Wakeland	---	>80	High	Moderate	Low.
8349B:					
Zumbro	---	>80	Low	Low	Low.
8396A:					
Vesser	---	>80	High	High	Moderate.
8404A:					
Titus	---	>80	High	High	Low.
8451A:					
Lawson	---	>80	High	Moderate	Low.
8452A:					
Riley	---	>80	High	High	Low.
8634A:					
Blyton	---	>80	High	Moderate	Low.
W:					
Water.					

NRCS SOILS 37A
3/95

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

DESCRIPTION	SYMBOL

CULTURAL FEATURES

BOUNDARIES

- • National, state, or province
- • County or parish
- Minor civil division
- Reservation, (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access areas
- • Field sheet matchline & neatline
- Previously published survey

OTHER BOUNDARY (label)

- Airport, airfield — Davis airstrip
- • Cemetery — St Johns Cemetery
- City / county Park — Central Park

STATE COORDINATE TICK

• LAND DIVISION CORNERS (section and land grants)

• GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- # Trails

ROAD EMBLEMS & DESIGNATIONS

- • Interstate — 79; 79 345
- • Federal — 410; 410 224
- • State — 52; 52 347
- County, farm, or ranch — 376

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPELINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad
- ++Single side slope (showing actual feature location)

DAMS

- Medium or small — W

LANDFORM FEATURES

- Prominent Hill or Peak
- Soil Sample Site — S

* Cultural features for use in Illinois

DESCRIPTION	SYMBOL

CULTURAL FEATURES (cont.)

MISCELLANEOUS CULTURAL FEATURES

- Farmland, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and / or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end

DRAINAGE AND IRRIGATION

- Double line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch
- Intermittent drainage and/or irrigation ditch

SMALL LAKES, PONDS, AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

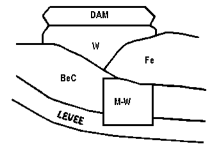
MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

DESCRIPTION	SYMBOL

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS



LANDFORM FEATURES

- ESCARPMENTS
  - Bedrock
  - Other than bedrock
- SHORT STEEP SLOPE
- GULLY
- DEPRESSION, closed
- SINKHOLE

EXCAVATIONS

- PITS
  - Borrow pit
  - Gravel pit
  - Mine or quarry
- LANDFILL

MISCELLANEOUS SURFACE FEATURES

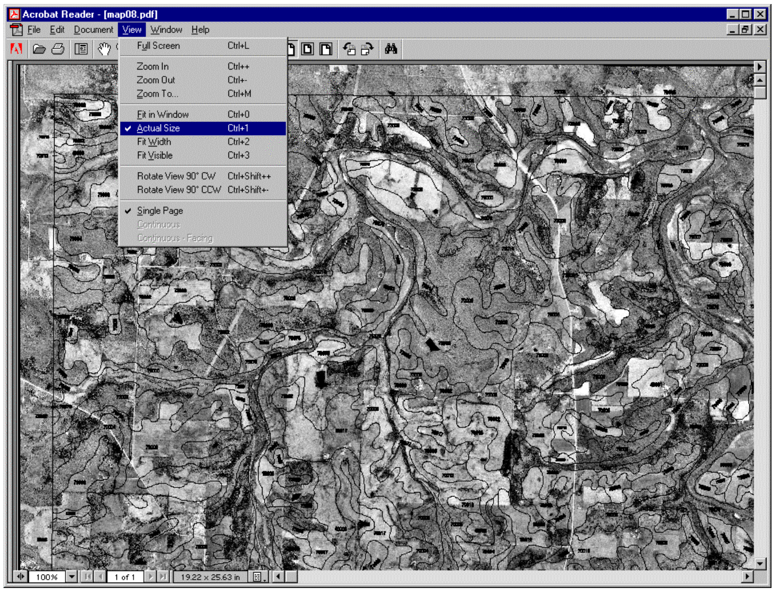
- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

RECOMMENDED AD HOC SOIL SYMBOLS

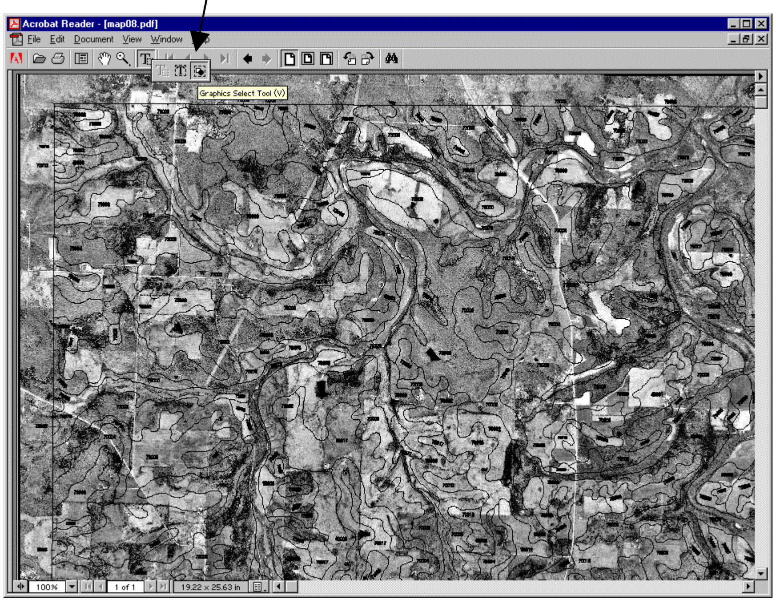
	SYMBOL_ID			SYMBOL_ID	
	1			23	
	2			24	
	3			25	
	4		Gray spot	26 GSP	
	5			27	
	6			28	
	7		Calcareous spot	29 CSP	
	8		Muck spot	30 MUC	
	9			31	
	10			32	
	11			33	
Dumps	12 DMP			34	
	13		Mine subsided Area	35 MSA	
	14			36	
Oil brine spot	15 OBS			37	
	16			38	
	17			39	
	18		Glacial Till spot	40 GLA	
	19			41	
Disturbed soil spot	20 DSS			42	
	21			43	
	22			44	

Printing Soil Survey Maps

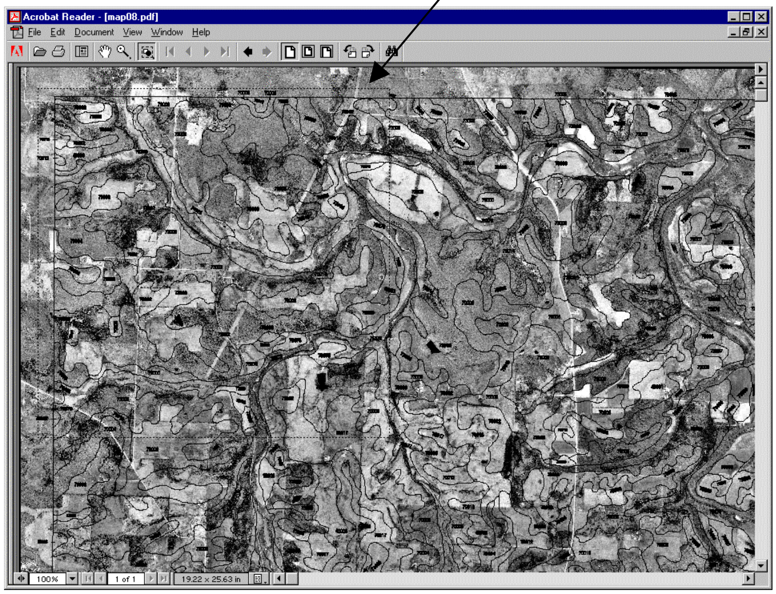
The soil survey maps were made at a scale of 1:12000 and were designed to be used at that scale. To print the maps at 1:12000 scale, set the view to Actual Size from the View pull down menu.



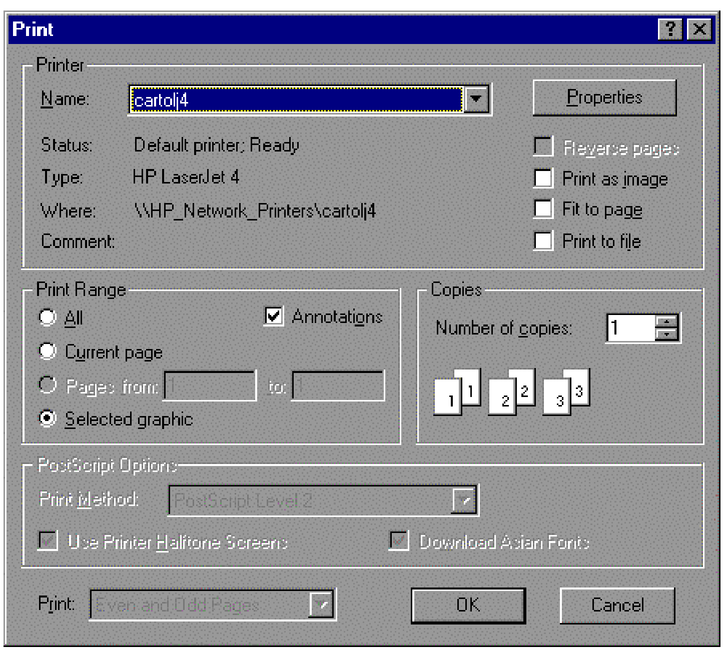
Using the pan tool, go to the area you would like to print. Select the Graphic Selection Tool by holding down the Text Selection Tool button and clicking on the Graphic Selection Tool button.



Then using the Graphic Selection Tool drag a box around the area you would like to print. Note dashed lines forming a box around area to print.

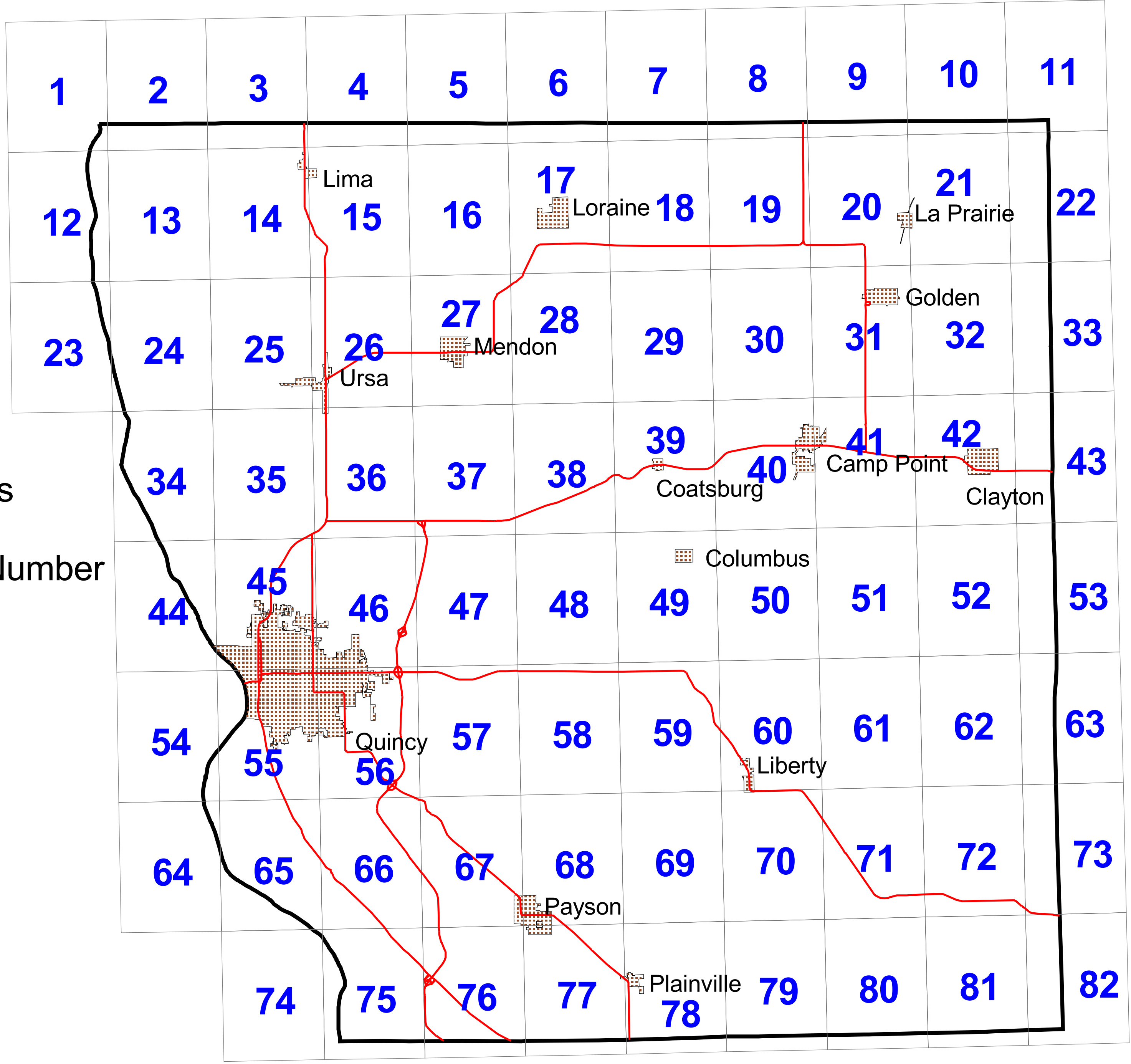


Select File Print. The Print Range will be set to Selected graphic. Click OK and the map will be sent to the printer.



Index to Map Sheets
Adams County, Illinois

Click on Map Sheet Number to open soil map



UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
CANTON NE QUADRANGLE
SHEET NUMBER 1 OF 82

91°33′45″ 40°15′00″ — 91°30′00″ 40°15′00″

40°11′15″ 91°33′45″ — 40°11′15″ 91°30′00″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 KAHOKA SE SW
2 KAHOKA SE SE
3 WARSAW SW
4 CANTON NW
5 LIMA NW (SHEET 2)
6 CANTON SW
7 CANTON SE (SHEET 12)
8 LIMA SW (SHEET 13)

INDEX TO ADJOINING 3.75 MAPS

CANTON NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 KAHOKA SE SE
2 WARSAW SW
3 WARSAW SE
4 CANTON NE (SHEET 1)
5 LIMA NE (SHEET 3)
6 CANTON SE (SHEET 12)
7 LIMA SW (SHEET 13)
8 LIMA SE (SHEET 14)

INDEX TO ADJOINING 3.75 MAPS

LIMA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 WARSAW SW
2 WARSAW SE
3 SUTTER SW
4 LIMA NW (SHEET 2)
5 TIOGA NW (SHEET 4)
6 LIMA SW (SHEET 13)
7 LIMA SE (SHEET 14)
8 TIOGA SW (SHEET 15)

INDEX TO ADJOINING 3.75 MAPS

LIMA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 3 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
TIOGA NW QUADRANGLE
SHEET NUMBER 4 OF 82

91°22′30″ 40°15′00″ — 91°18′45″ 40°15′00″

40°11′15″ 91°22′30″ — 40°11′15″ 91°18′45″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 WARSAW SE
2 SUTTER SW
3 SUTTER SE
4 LIMA NE (SHEET 3)
5 TIOGA NE (SHEET 5)
6 LIMA SE (SHEET 14)
7 TIOGA SW (SHEET 15)
8 TIOGA SE (SHEET 16)

INDEX TO ADJOINING 3.75 MAPS

TIOGA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 4 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
TIOGA NE QUADRANGLE
SHEET NUMBER 5 OF 82

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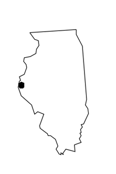
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 0 0.5

FEET 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS 0.5 0 0.5

1	2	3
4		5
6	7	8

1 SUTTER SW
2 SUTTER SE
3 WEST POINT SW
4 TIOGA NW (SHEET 4)
5 LORAINE NW (SHEET 6)
6 TIOGA SW (SHEET 15)
7 TIOGA SE (SHEET 16)
8 LORAINE SW (SHEET 17)

INDEX TO ADJOINING 3.75 MAPS

TIOGA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LORAINE NW QUADRANGLE
SHEET NUMBER 6 OF 82

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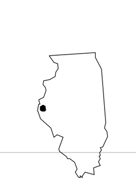
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 SUTTER SE
2 WEST POINT SW
3 WEST POINT SE
4 TIOGA NE (SHEET 5)
5 LORAINE NE (SHEET 7)
6 TIOGA SE (SHEET 16)
7 LORAINE SW (SHEET 17)
8 LORAINE SE (SHEET 18)

INDEX TO ADJOINING 3.75 MAPS

LORAINE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 6 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LORAINE NE QUADRANGLE
SHEET NUMBER 7 OF 82

91°11'15"
40°15'00"

91°07'30"
40°15'00"

40°11'15"
91°11'15"

40°11'15"
91°07'30"

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 WEST POINT SW
2 WEST POINT SE
3 BENTLEY SW
4 LORAINE NW (SHEET 6)
5 BOWEN NW (SHEET 8)
6 LORAINE SW (SHEET 17)
7 LORAINE SE (SHEET 18)
8 BOWEN SW (SHEET 19)

INDEX TO ADJOINING 3.75 MAPS

LORAINE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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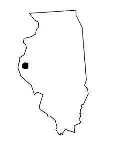
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 WEST POINT SE
2 BENTLEY SW
3 BENTLEY SE
4 LORAINE NE (SHEET 7)
5 BOWEN NE (SHEET 9)
6 LORAINE SE (SHEET 18)
7 BOWEN SW (SHEET 19)
8 BOWEN SE (SHEET 20)

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BOWEN NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 8 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
BOWEN NE QUADRANGLE
SHEET NUMBER 9 OF 82

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1 BENTLEY SW
2 BENTLEY SE
3 PLYMOUTH SW
4 BOWEN NW (SHEET 8)
5 AUGUSTA NW (SHEET 10)
6 BOWEN SW (SHEET 19)
7 BOWEN SE (SHEET 20)
8 AUGUSTA SW (SHEET 21)

INDEX TO ADJOINING 3.75 MAPS

BOWEN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 9 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
AUGUSTA NW QUADRANGLE
SHEET NUMBER 10 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1 BENTLEY SE
2 PLYMOUTH SW
3 PLYMOUTH SE
4 BOWEN NE (SHEET 9)
5 AUGUSTA NE (SHEET 11)
6 BOWEN SE (SHEET 20)
7 AUGUSTA SW (SHEET 21)
8 AUGUSTA SE (SHEET 22)

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AUGUSTA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 82

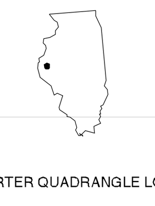
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
AUGUSTA NE QUADRANGLE
SHEET NUMBER 11 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

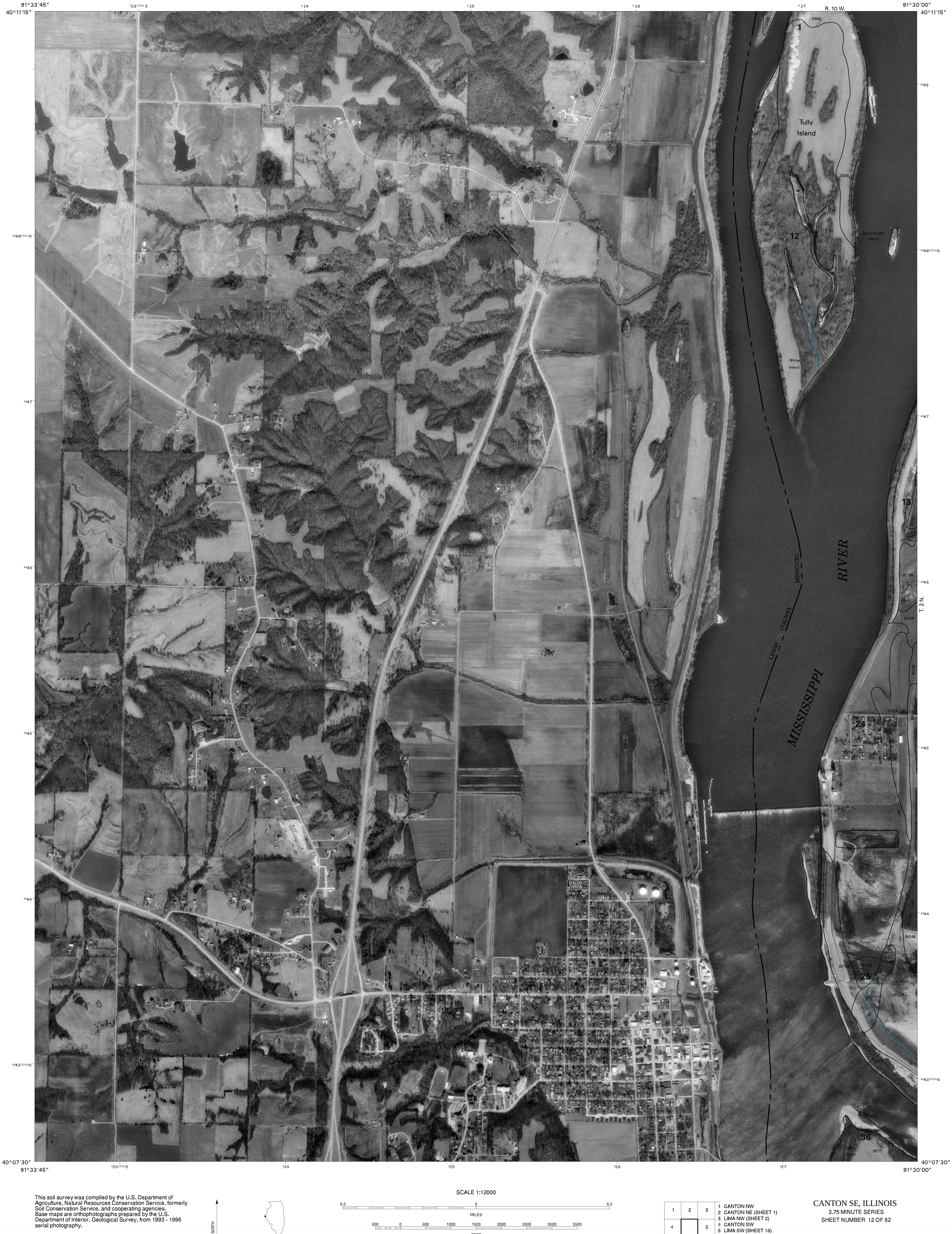
1	2	3
4		5
6	7	8

1 PLYMOUTH SW
2 PLYMOUTH SE
3 FANDON SW
4 AUGUSTA NW (SHEET 10)
5 CAMDEN NW
6 AUGUSTA SW (SHEET 21)
7 AUGUSTA SE (SHEET 22)
8 CAMDEN SW

INDEX TO ADJOINING 3.75 MAPS

AUGUSTA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 CANTON NW
2 CANTON NE (SHEET 1)
3 LIMA NW (SHEET 2)
4 CANTON SW
5 LIMA SW (SHEET 13)
6 LA GRANGE NW
7 LA GRANGE NE (SHEET 23)
8 LONG ISLAND NW (SHEET 24)

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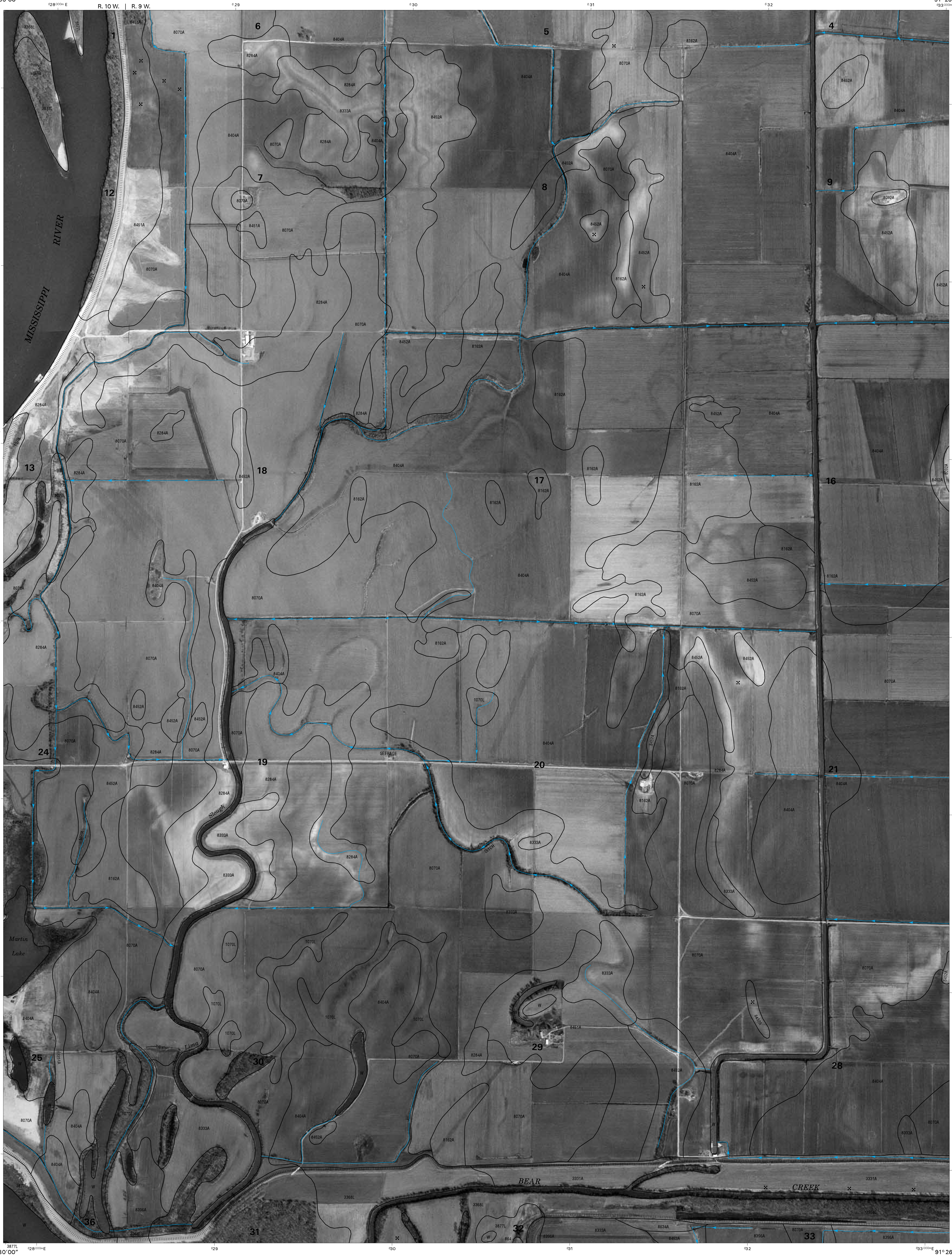
CANTON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LIMA SW QUADRANGLE
SHEET NUMBER 13 OF 82



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 CANTON NE (SHEET 1)
2 LIMA NW (SHEET 2)
3 LIMA NE (SHEET 3)
4 CANTON SE (SHEET 12)
5 LIMA SE (SHEET 14)
6 LA GRANGE NE (SHEET 23)
7 LONG ISLAND NW (SHEET 24)
8 LONG ISLAND NE (SHEET 25)

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LIMA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 13 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 LIMA NW (SHEET 2)
2 LIMA NE (SHEET 3)
3 TIOGA NW (SHEET 4)
4 LIMA SW (SHEET 13)
5 TIOGA SW (SHEET 15)
6 LONG ISLAND NW (SHEET 24)
7 LONG ISLAND NE (SHEET 25)
8 MENDON NW (SHEET 26)

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LIMA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
TIOGA SW QUADRANGLE
SHEET NUMBER 15 OF 82

91°22'30" 40°11'15" — R. 8 W. — 91°18'45" 40°11'15"

40°07'30" 91°22'30" — 40°07'30" 91°18'45"

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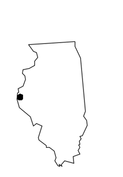
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 LIMA NE (SHEET 3)
2 TIOGA NW (SHEET 4)
3 TIOGA NE (SHEET 5)
4 LIMA SE (SHEET 14)
5 TIOGA SE (SHEET 16)
6 LONG ISLAND NE (SHEET 25)
7 MENDON NW (SHEET 26)
8 MENDON NE (SHEET 27)

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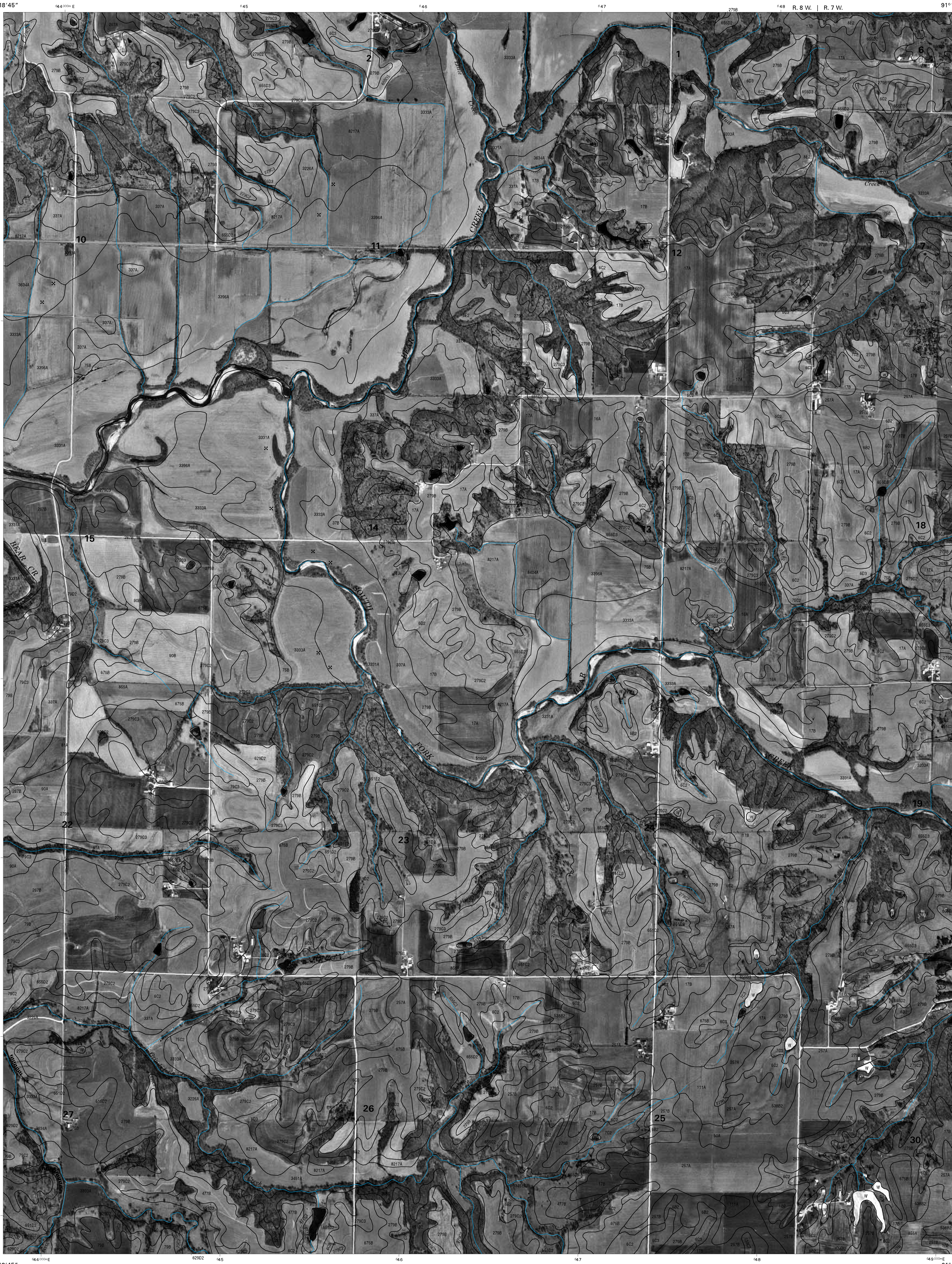
TIOGA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
TIOGA SE QUADRANGLE
SHEET NUMBER 16 OF 82



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 TIOGA NW (SHEET 4)
2 TIOGA NE (SHEET 5)
3 LORAINE NW (SHEET 6)
4 TIOGA SW (SHEET 15)
5 LORAINE SW (SHEET 17)
6 MENDON NW (SHEET 26)
7 MENDON NE (SHEET 27)
8 COATSBURG NW (SHEET 28)

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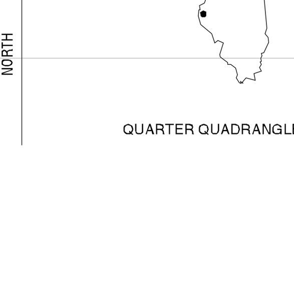
TIOGA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 16 OF 82

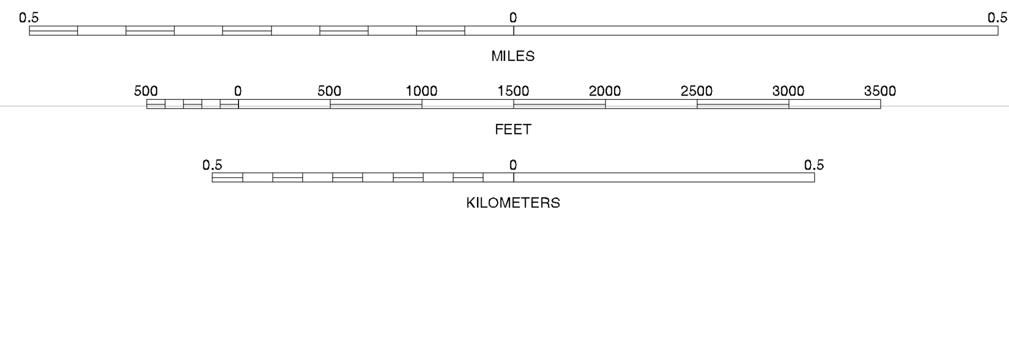
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

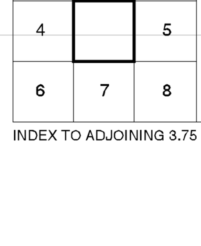
ADAMS COUNTY, ILLINOIS
LORAINE SW QUADRANGLE
SHEET NUMBER 17 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.







1 TIOGA NE (SHEET 5)
2 LORAINE NW (SHEET 6)
3 LORAINE NE (SHEET 7)
4 TIOGA SE (SHEET 16)
5 LORAINE SE (SHEET 18)
6 MENDON NE (SHEET 27)
7 COATSBURG NW (SHEET 28)
8 COATSBURG NE (SHEET 29)

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LORAINE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 17 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LORAINE SE QUADRANGLE
SHEET NUMBER 18 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 LORAINE NW (SHEET 6)
2 LORAINE NE (SHEET 7)
3 BOWEN NW (SHEET 8)
4 LORAINE SW (SHEET 17)
5 BOWEN SW (SHEET 19)
6 COATSBURG NW (SHEET 28)
7 COATSBURG NE (SHEET 29)
8 CAMP POINT NW (SHEET 30)

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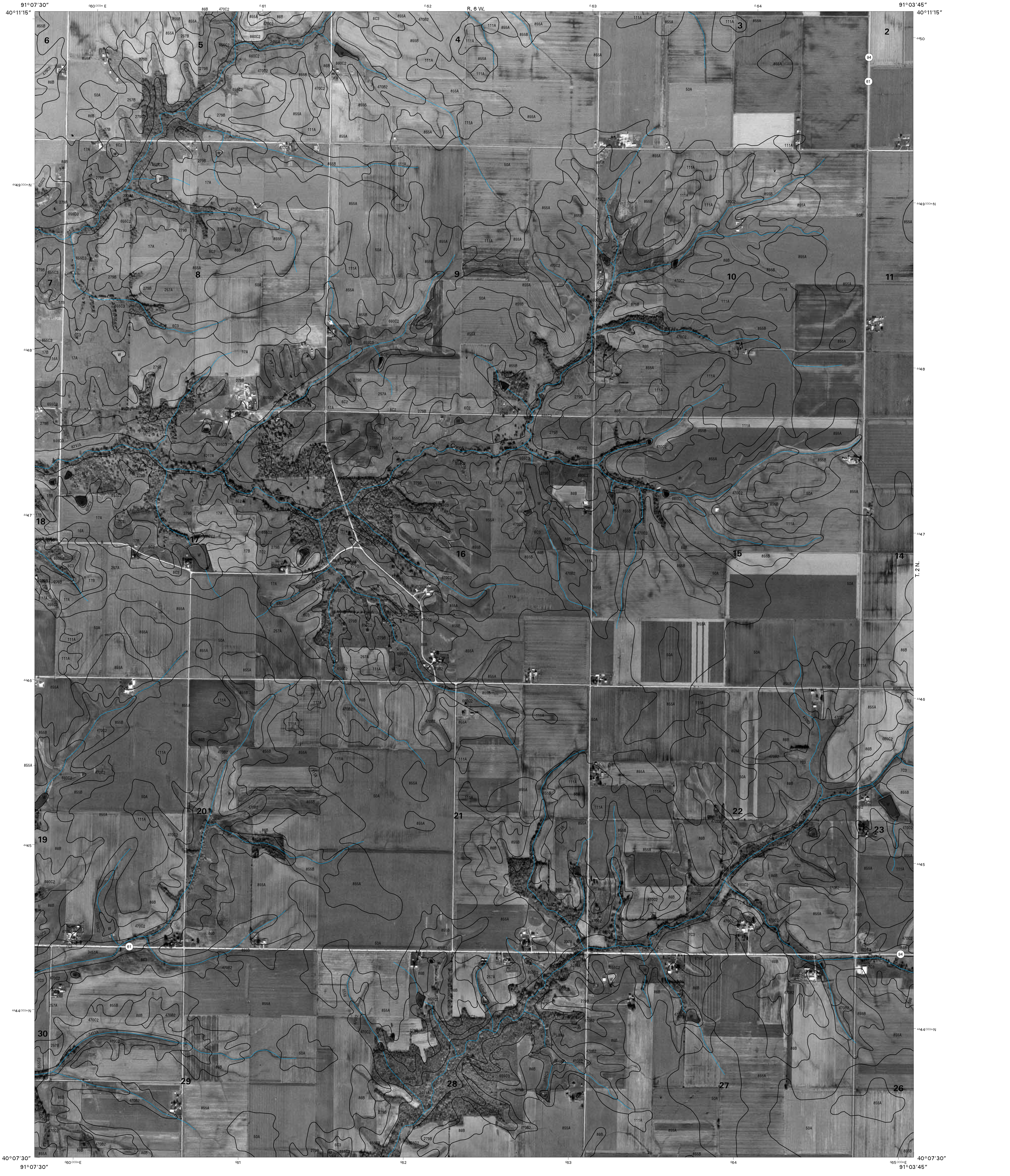
LORAINE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
BOWEN SW QUADRANGLE
SHEET NUMBER 19 OF 82



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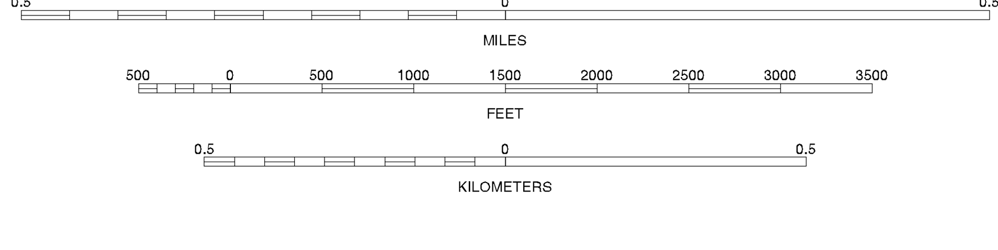
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION



1	2	3
4		5
6	7	8

1 LORAINE NE (SHEET 7)
2 BOWEN NW (SHEET 8)
3 BOWEN NE (SHEET 9)
4 LORAINE SE (SHEET 18)
5 BOWEN SE (SHEET 20)
6 COATSBURG NE (SHEET 29)
7 CAMP POINT NW (SHEET 30)
8 CAMP POINT NE (SHEET 31)

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BOWEN SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 19 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
BOWEN SE QUADRANGLE
SHEET NUMBER 20 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 BOWEN NW (SHEET 8)
2 BOWEN NE (SHEET 9)
3 AUGUSTA NW (SHEET 10)
4 BOWEN SW (SHEET 19)
5 AUGUSTA SW (SHEET 21)
6 CAMP POINT NW (SHEET 30)
7 CAMP POINT NE (SHEET 31)
8 CLAYTON NW (SHEET 32)

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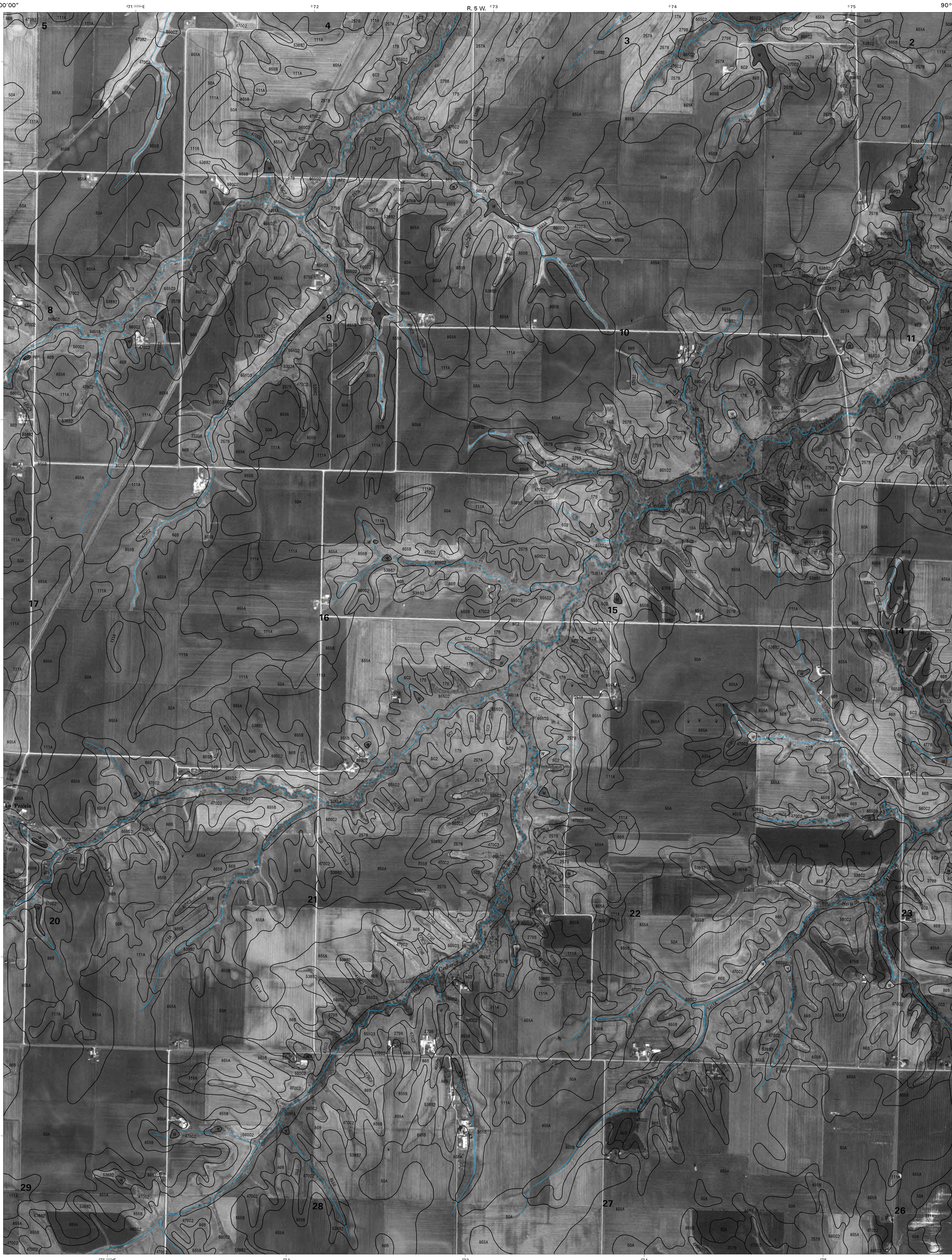
BOWEN SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 20 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
AUGUSTA SW QUADRANGLE
SHEET NUMBER 21 OF 82



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 BOWEN NE (SHEET 9)
2 AUGUSTA NW (SHEET 10)
3 AUGUSTA NE (SHEET 11)
4 BOWEN SE (SHEET 20)
5 AUGUSTA SE (SHEET 22)
6 CAMP POINT NE (SHEET 31)
7 CLAYTON NW (SHEET 32)
8 CLAYTON NE (SHEET 33)

INDEX TO ADJOINING 3.75 MAPS

AUGUSTA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 82

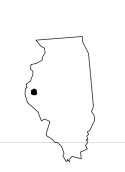
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
AUGUSTA SE QUADRANGLE
SHEET NUMBER 22 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 AUGUSTA NW (SHEET 10)
2 AUGUSTA NE (SHEET 11)
3 CAMDEN NW
4 AUGUSTA SW (SHEET 21)
5 CAMDEN SW
6 CLAYTON NW (SHEET 32)
7 CLAYTON NE (SHEET 33)
8 LAKE MOUNT STERLING NW

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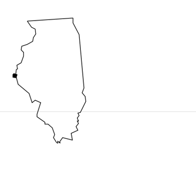
AUGUSTA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 CANTON SW
2 CANTON SE (SHEET 12)
3 LIMA SW (SHEET 13)
4 LA GRANGE NW
5 LONG ISLAND NW (SHEET 24)
6 LA GRANGE SW
7 LA GRANGE SE
8 LONG ISLAND SW (SHEET 34)

INDEX TO ADJOINING 3.75 MAPS

LA GRANGE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 23 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LONG ISLAND NW QUADRANGLE
SHEET NUMBER 24 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

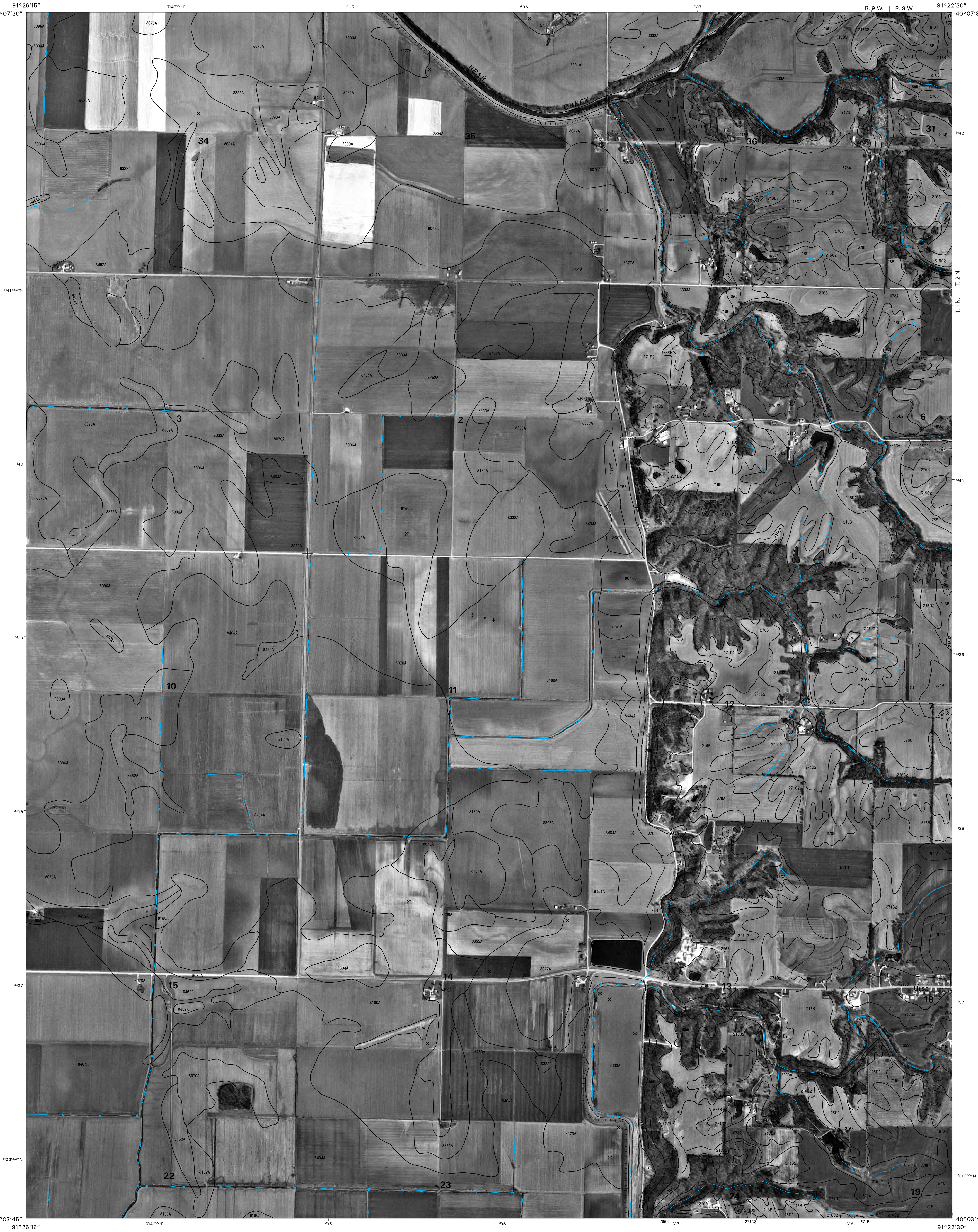
1 CANTON SE (SHEET 12)
2 LIMA SW (SHEET 13)
3 LIMA SE (SHEET 14)
4 LA GRANGE NE (SHEET 23)
5 LONG ISLAND NE (SHEET 25)
6 LA GRANGE SE
7 LONG ISLAND SW (SHEET 34)
8 LONG ISLAND SE (SHEET 35)

INDEX TO ADJOINING 3.75 MAPS

LONG ISLAND NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 24 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LONG ISLAND NE QUADRANGLE
SHEET NUMBER 25 OF 82



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

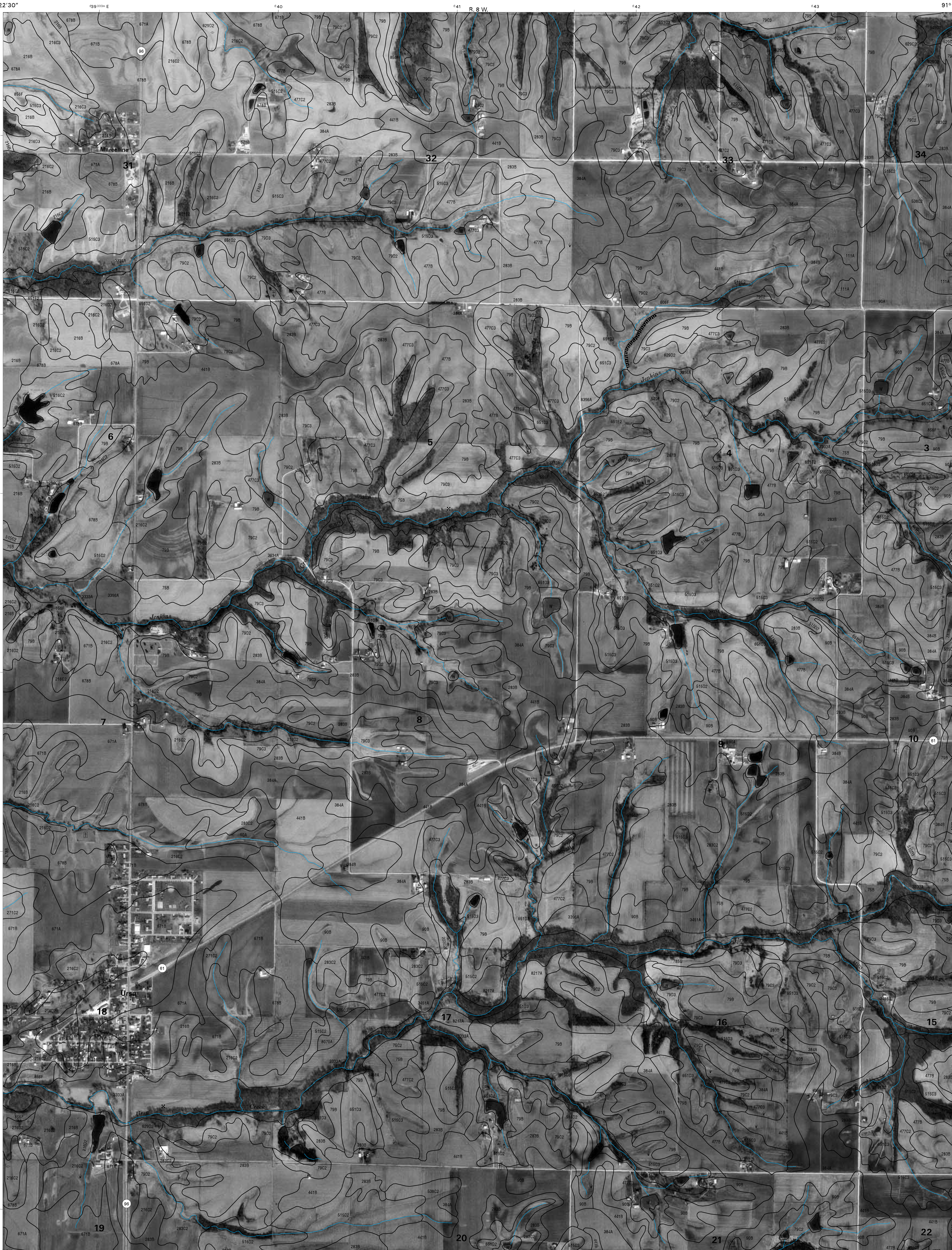
1 LIMA SW (SHEET 13)
2 LIMA SE (SHEET 14)
3 TIOGA SW (SHEET 15)
4 LONG ISLAND NW (SHEET 24)
5 MENDON NW (SHEET 26)
6 LONG ISLAND SW (SHEET 34)
7 LONG ISLAND SE (SHEET 35)
8 MENDON SW (SHEET 36)

INDEX TO ADJOINING 3.75 MAPS

LONG ISLAND NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
MENDON NW QUADRANGLE
SHEET NUMBER 26 OF 82



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 LIMA SE (SHEET 14)
2 TIOGA SW (SHEET 15)
3 TIOGA SE (SHEET 16)
4 LONG ISLAND NE (SHEET 25)
5 MENDON NE (SHEET 27)
6 LONG ISLAND SE (SHEET 35)
7 MENDON SW (SHEET 36)
8 MENDON SE (SHEET 37)

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MENDON NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
MENDON NE QUADRANGLE
SHEET NUMBER 27 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 TIOGA SW (SHEET 15)
2 TIOGA SE (SHEET 16)
3 LORAINE SW (SHEET 17)
4 MENDON NW (SHEET 26)
5 COATSBURG NW (SHEET 28)
6 MENDON SW (SHEET 36)
7 MENDON SE (SHEET 37)
8 COATSBURG SW (SHEET 38)

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MENDON NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
COATSBURG NW QUADRANGLE
SHEET NUMBER 28 OF 82

91°15′00″ 40°07′30″ R. 7 W. 91°11′15″ 40°07′30″

40°03′45″ 91°15′00″ 40°03′45″ 91°11′15″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 TIOGA SE (SHEET 16)
2 LORAINE SW (SHEET 17)
3 LORAINE SE (SHEET 18)
4 MENDON NE (SHEET 27)
5 COATSBURG NE (SHEET 29)
6 MENDON SE (SHEET 37)
7 COATSBURG SW (SHEET 38)
8 COATSBURG SE (SHEET 39)

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COATSBURG NW, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
COATSBURG NE QUADRANGLE
SHEET NUMBER 29 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 LORAINE SW (SHEET 17)
2 LORAINE SE (SHEET 18)
3 BOWEN SW (SHEET 19)
4 COATSBURG NW (SHEET 28)
5 CAMP POINT NW (SHEET 30)
6 COATSBURG SW (SHEET 38)
7 COATSBURG SE (SHEET 39)
8 CAMP POINT SW (SHEET 40)

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COATSBURG NE, ILLINOIS
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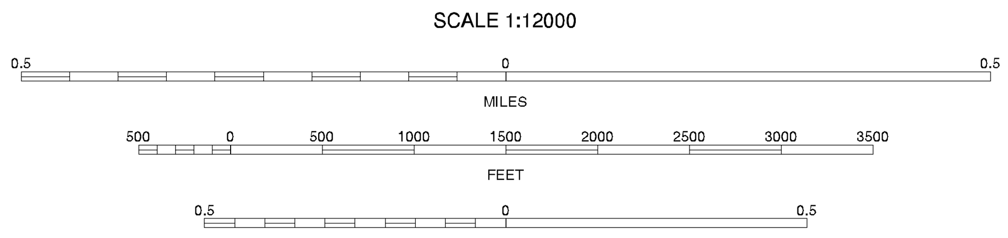
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



1	2	3
4		5
6	7	8

1 LORAINE SE (SHEET 18)
2 BOWEN SW (SHEET 19)
3 BOWEN SE (SHEET 20)
4 COATSBURG NE (SHEET 29)
5 CAMP POINT NE (SHEET 31)
6 COATSBURG SE (SHEET 39)
7 CAMP POINT SW (SHEET 40)
8 CAMP POINT SE (SHEET 41)

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UNITED STATES
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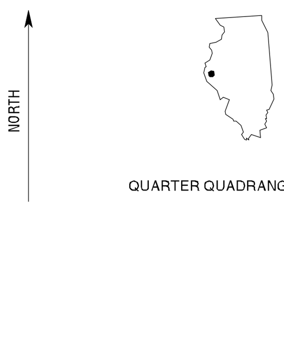
ADAMS COUNTY, ILLINOIS
CAMP POINT NE QUADRANGLE
SHEET NUMBER 31 OF 82

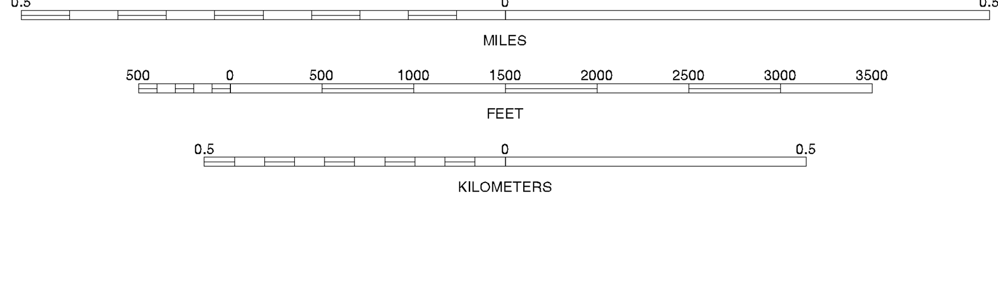
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 BOWEN SW (SHEET 19)
2 BOWEN SE (SHEET 20)
3 AUGUSTA SW (SHEET 21)
4 CAMP POINT NW (SHEET 30)
5 CLAYTON NW (SHEET 32)
6 CAMP POINT SW (SHEET 40)
7 CAMP POINT SE (SHEET 41)
8 CLAYTON SW (SHEET 42)

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CAMP POINT NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 31 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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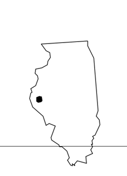
ADAMS COUNTY, ILLINOIS
CLAYTON NW QUADRANGLE
SHEET NUMBER 32 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 BOWEN SE (SHEET 20)
2 AUGUSTA SW (SHEET 21)
3 AUGUSTA SE (SHEET 22)
4 CAMP POINT NE (SHEET 31)
5 CLAYTON NE (SHEET 33)
6 CAMP POINT SE (SHEET 41)
7 CLAYTON SW (SHEET 42)
8 CLAYTON SE (SHEET 43)

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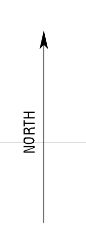
CLAYTON NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 82

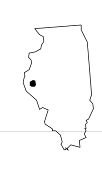
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
CLAYTON NE QUADRANGLE
SHEET NUMBER 33 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

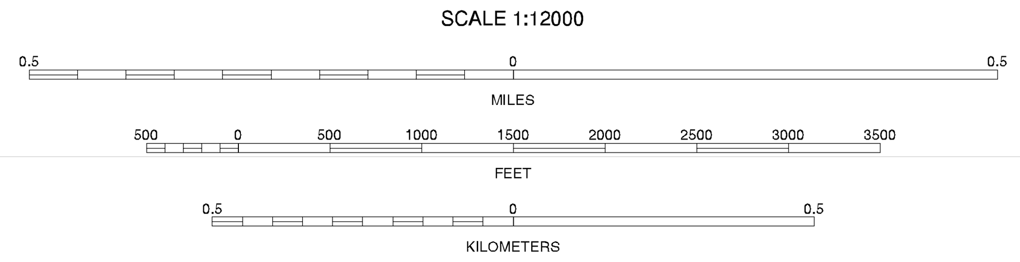
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.





QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 AUGUSTA SW (SHEET 21)
2 AUGUSTA SE (SHEET 22)
3 CAMDEN SW
4 CLAYTON NW (SHEET 32)
5 LAKE MOUNT STERLING NW
6 CLAYTON SW (SHEET 42)
7 CLAYTON SE (SHEET 43)
8 LAKE MOUNT STERLING SW

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UNITED STATES
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ADAMS COUNTY, ILLINOIS
LONG ISLAND SW QUADRANGLE
SHEET NUMBER 34 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 LA GRANGE NE (SHEET 23)
2 LONG ISLAND NW (SHEET 24)
3 LONG ISLAND NE (SHEET 25)
4 LA GRANGE SE
5 LONG ISLAND SE (SHEET 35)
6 MAYWOOD NE
7 QUINCY WEST NW (SHEET 44)
8 QUINCY WEST NE (SHEET 45)

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LONG ISLAND SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 34 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LONG ISLAND SE QUADRANGLE
SHEET NUMBER 35 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 LONG ISLAND NW (SHEET 24)
2 LONG ISLAND NE (SHEET 25)
3 MENDON NW (SHEET 26)
4 LONG ISLAND SW (SHEET 34)
5 MENDON SW (SHEET 36)
6 QUINCY WEST NW (SHEET 44)
7 QUINCY WEST NE (SHEET 45)
8 QUINCY EAST NW (SHEET 46)

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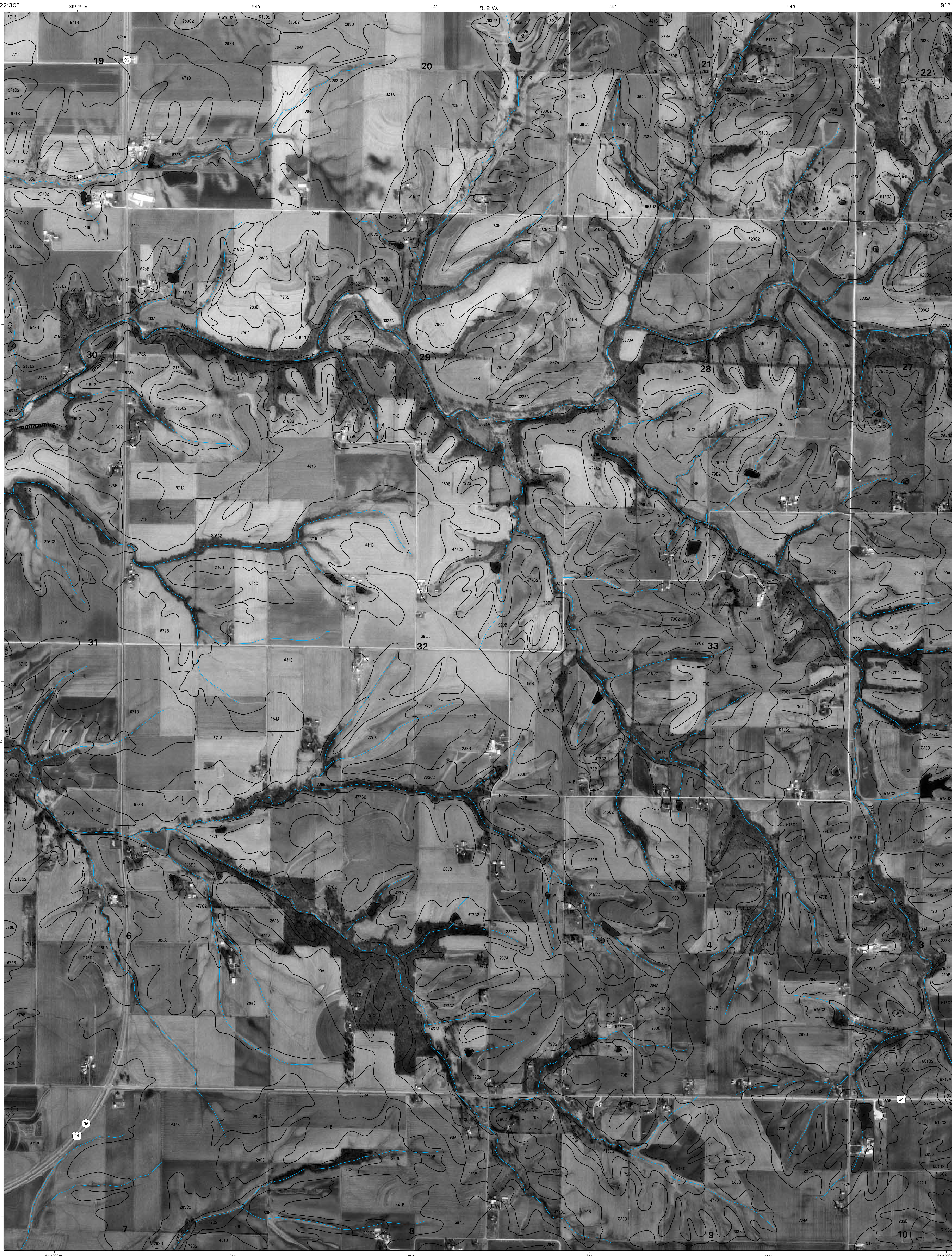
LONG ISLAND SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 82



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 LONG ISLAND NE (SHEET 25)
2 MENDON NW (SHEET 26)
3 MENDON NE (SHEET 27)
4 LONG ISLAND SE (SHEET 35)
5 MENDON SE (SHEET 37)
6 QUINCY WEST NE (SHEET 45)
7 QUINCY EAST NW (SHEET 46)
8 QUINCY EAST NE (SHEET 47)

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MENDON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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ADAMS COUNTY, ILLINOIS
MENDON SE QUADRANGLE
SHEET NUMBER 37 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 MENDON NW (SHEET 26)
2 MENDON NE (SHEET 27)
3 COATSBURG NW (SHEET 28)
4 MENDON SW (SHEET 36)
5 COATSBURG SW (SHEET 38)
6 QUINCY EAST NW (SHEET 46)
7 QUINCY EAST NE (SHEET 47)
8 COLUMBUS NW (SHEET 48)

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MENDON SE, ILLINOIS
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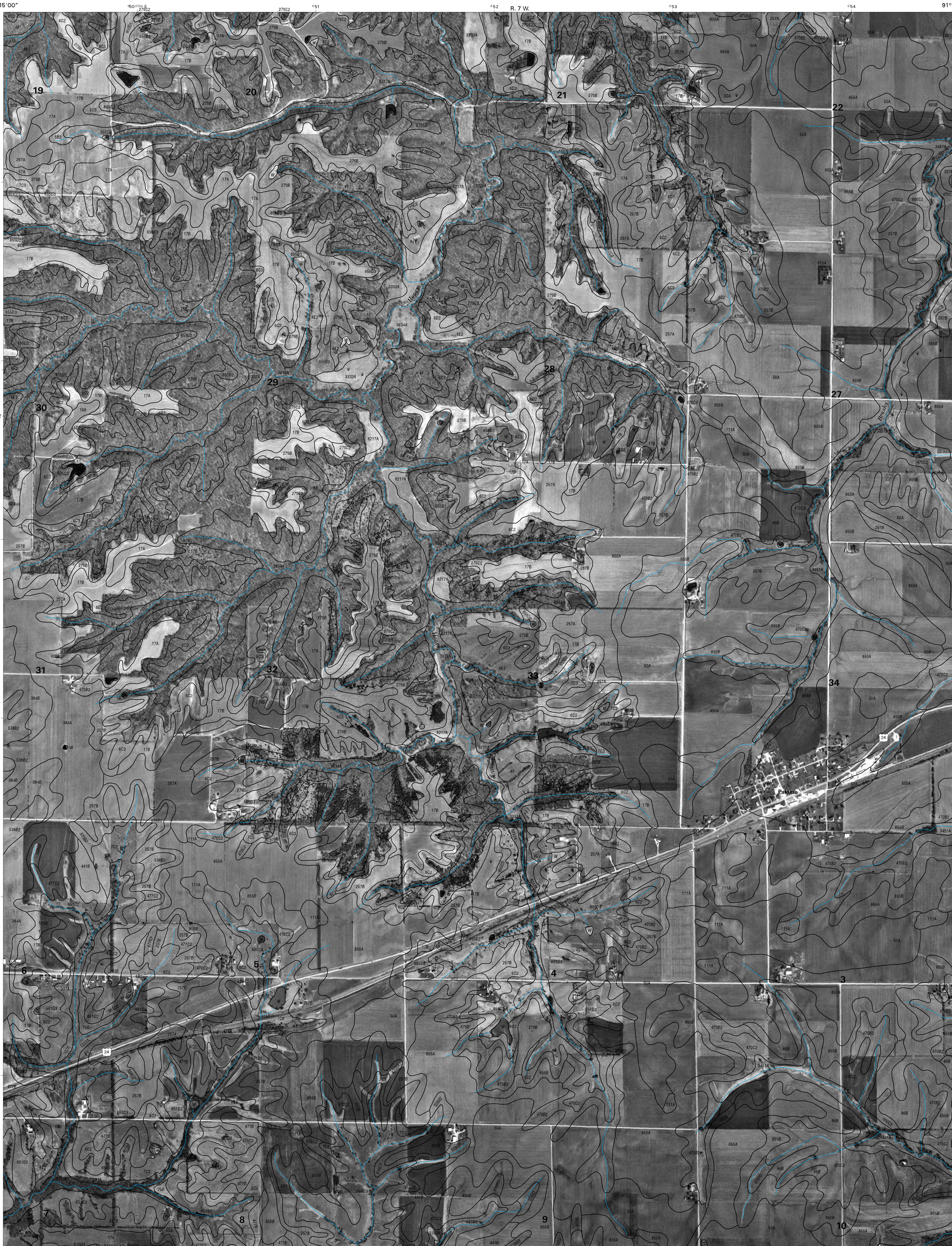
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
COATSBURG SW QUADRANGLE
SHEET NUMBER 38 OF 82

91°15′00″ 40°03′45″ — 91°11′15″ 40°03′45″



40°00′00″ 91°15′00″ — 40°00′00″ 91°11′15″

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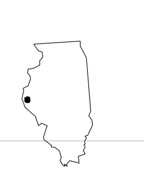
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 MENDON NE (SHEET 27)
2 COATSBURG NW (SHEET 28)
3 COATSBURG NE (SHEET 29)
4 MENDON SE (SHEET 37)
5 COATSBURG SE (SHEET 39)
6 QUINCY EAST NE (SHEET 47)
7 COLUMBUS NW (SHEET 48)
8 COLUMBUS NE (SHEET 49)

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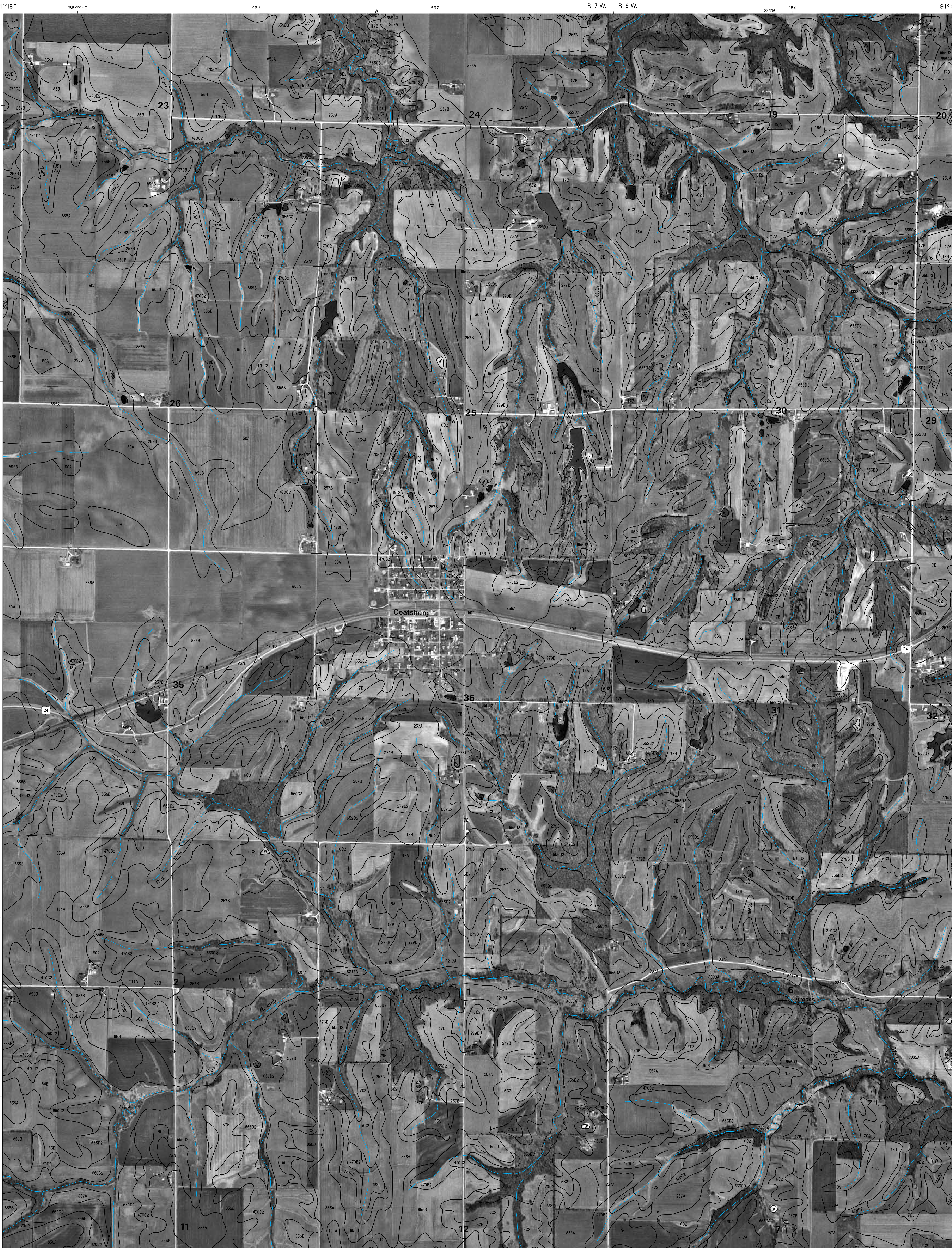
COATSBURG SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 38 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
COATSBURG SE QUADRANGLE
SHEET NUMBER 39 OF 82



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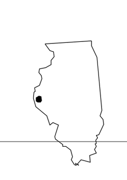
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 COATSBURG NW (SHEET 28)
2 COATSBURG NE (SHEET 29)
3 CAMP POINT NW (SHEET 30)
4 COATSBURG SW (SHEET 38)
5 CAMP POINT SW (SHEET 40)
6 COLUMBUS NW (SHEET 48)
7 COLUMBUS NE (SHEET 49)
8 LIBERTY NW (SHEET 50)

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COATSBURG SE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
CAMP POINT SW QUADRANGLE
SHEET NUMBER 40 OF 82

91°07′30″ 40°03′45″ — 91°03′45″ 40°03′45″

40°00′00″ 91°07′30″ — 40°00′00″ 91°03′45″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 COATSBURG NE (SHEET 29)
2 CAMP POINT NW (SHEET 30)
3 CAMP POINT NE (SHEET 31)
4 COATSBURG SE (SHEET 39)
5 CAMP POINT SE (SHEET 41)
6 COLUMBUS NE (SHEET 49)
7 LIBERTY NW (SHEET 50)
8 LIBERTY NE (SHEET 51)

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CAMP POINT SW, ILLINOIS

3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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ADAMS COUNTY, ILLINOIS
CAMP POINT SE QUADRANGLE
SHEET NUMBER 41 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 CAMP POINT NW (SHEET 30)
2 CAMP POINT NE (SHEET 31)
3 CLAYTON NW (SHEET 32)
4 CAMP POINT SW (SHEET 40)
5 CLAYTON SW (SHEET 42)
6 LIBERTY NW (SHEET 50)
7 LIBERTY NE (SHEET 51)
8 KELLERVILLE NW (SHEET 52)

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CAMP POINT SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 41 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
CLAYTON SW QUADRANGLE
SHEET NUMBER 42 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 CAMP POINT NE (SHEET 31)
2 CLAYTON NW (SHEET 32)
3 CLAYTON NE (SHEET 33)
4 CAMP POINT SE (SHEET 41)
5 CLAYTON SE (SHEET 43)
6 LIBERTY NE (SHEET 51)
7 KELLERVILLE NW (SHEET 52)
8 KELLERVILLE NE (SHEET 53)

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CLAYTON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 42 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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ADAMS COUNTY, ILLINOIS
CLAYTON SE QUADRANGLE
SHEET NUMBER 43 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 CLAYTON NW (SHEET 32)
2 CLAYTON NE (SHEET 33)
3 LAKE MOUNT STERLING NW
4 CLAYTON SW (SHEET 42)
5 LAKE MOUNT STERLING SW
6 KELLERVILLE NW (SHEET 52)
7 KELLERVILLE NE (SHEET 53)
8 MOUNT STERLING NW

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CLAYTON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 43 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY WEST NW QUADRANGLE
SHEET NUMBER 44 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 LA GRANGE SE
2 LONG ISLAND SW (SHEET 34)
3 LONG ISLAND SE (SHEET 35)
4 MAYWOOD NE
5 QUINCY WEST NE (SHEET 45)
6 MAYWOOD SE
7 QUINCY WEST SW (SHEET 54)
8 QUINCY WEST SE (SHEET 55)

INDEX TO ADJOINING 3.75 MAPS

QUINCY WEST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 44 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY WEST NE QUADRANGLE
SHEET NUMBER 45 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 LONG ISLAND SW (SHEET 34)
2 LONG ISLAND SE (SHEET 35)
3 MENDON SW (SHEET 36)
4 QUINCY WEST NW (SHEET 44)
5 QUINCY EAST NW (SHEET 46)
6 QUINCY WEST SW (SHEET 54)
7 QUINCY WEST SE (SHEET 55)
8 QUINCY EAST SW (SHEET 56)

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QUINCY WEST NE, ILLINOIS
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY EAST NW QUADRANGLE
SHEET NUMBER 46 OF 82

SCALE 1:12000

MILES

FEET

KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 LONG ISLAND SE SHEET 35)
2 MENDON SW (SHEET 36)
3 MENDON SE (SHEET 37)
4 QUINCY WEST NE (SHEET 45)
5 QUINCY EAST NE (SHEET 47)
6 QUINCY WEST SE (SHEET 55)
7 QUINCY EAST SW (SHEET 56)
8 QUINCY EAST SE (SHEET 57)

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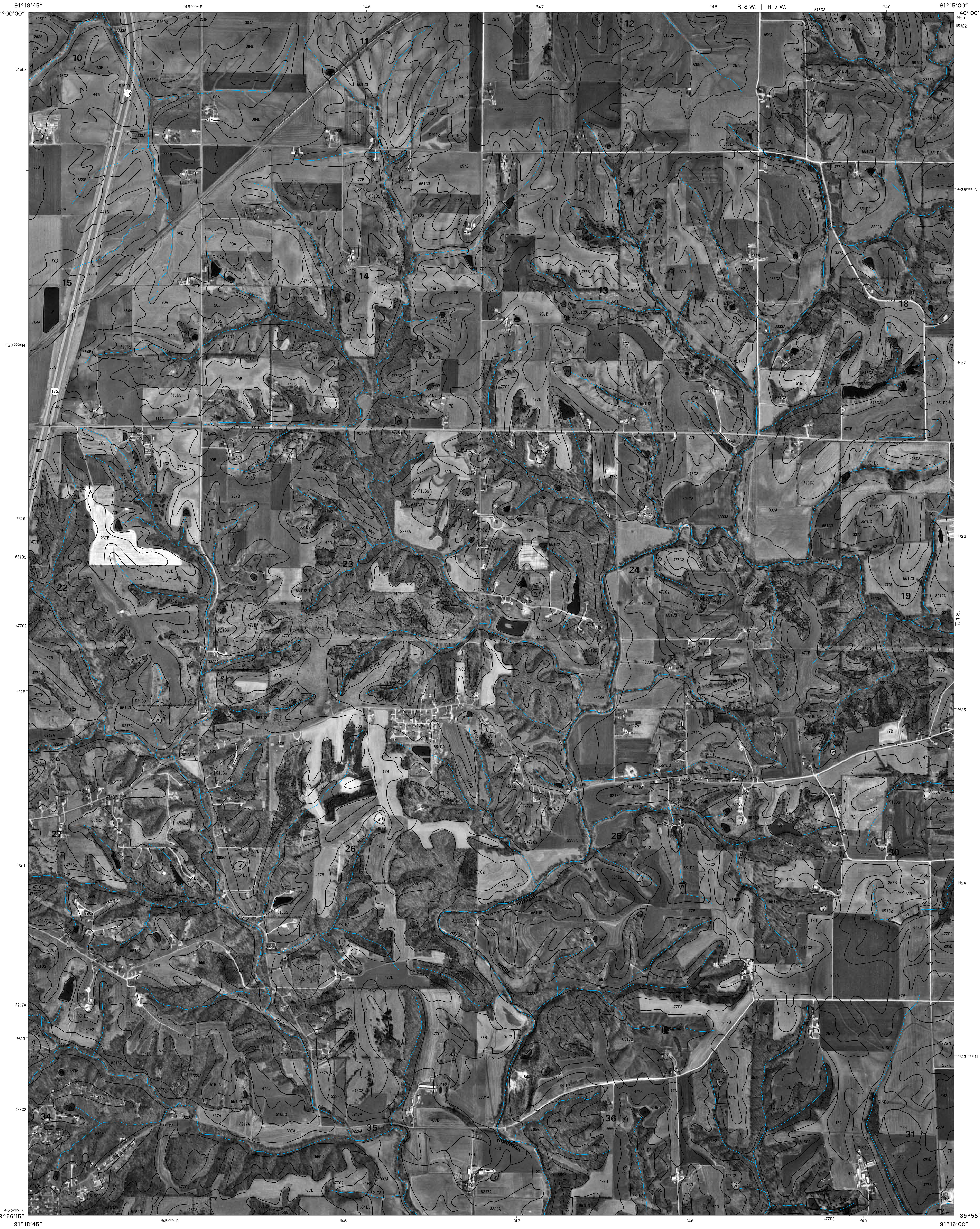
QUINCY EAST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 46 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY EAST NE QUADRANGLE
SHEET NUMBER 47 OF 82



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MENDON SW (SHEET 36)
2 MENDON SE (SHEET 37)
3 COATSBURG SW (SHEET 38)
4 QUINCY EAST NW (SHEET 46)
5 COLUMBUS NW (SHEET 48)
6 QUINCY EAST SW (SHEET 56)
7 QUINCY EAST SE (SHEET 57)
8 COLUMBUS SW (SHEET 58)

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QUINCY EAST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 47 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MENDON SE (SHEET 37)
2 COATSBURG SW (SHEET 38)
3 COATSBURG SE (SHEET 39)
4 QUINCY EAST NE (SHEET 47)
5 COLUMBUS NE (SHEET 49)
6 QUINCY EAST SE (SHEET 57)
7 COLUMBUS SW (SHEET 58)
8 COLUMBUS SE (SHEET 59)

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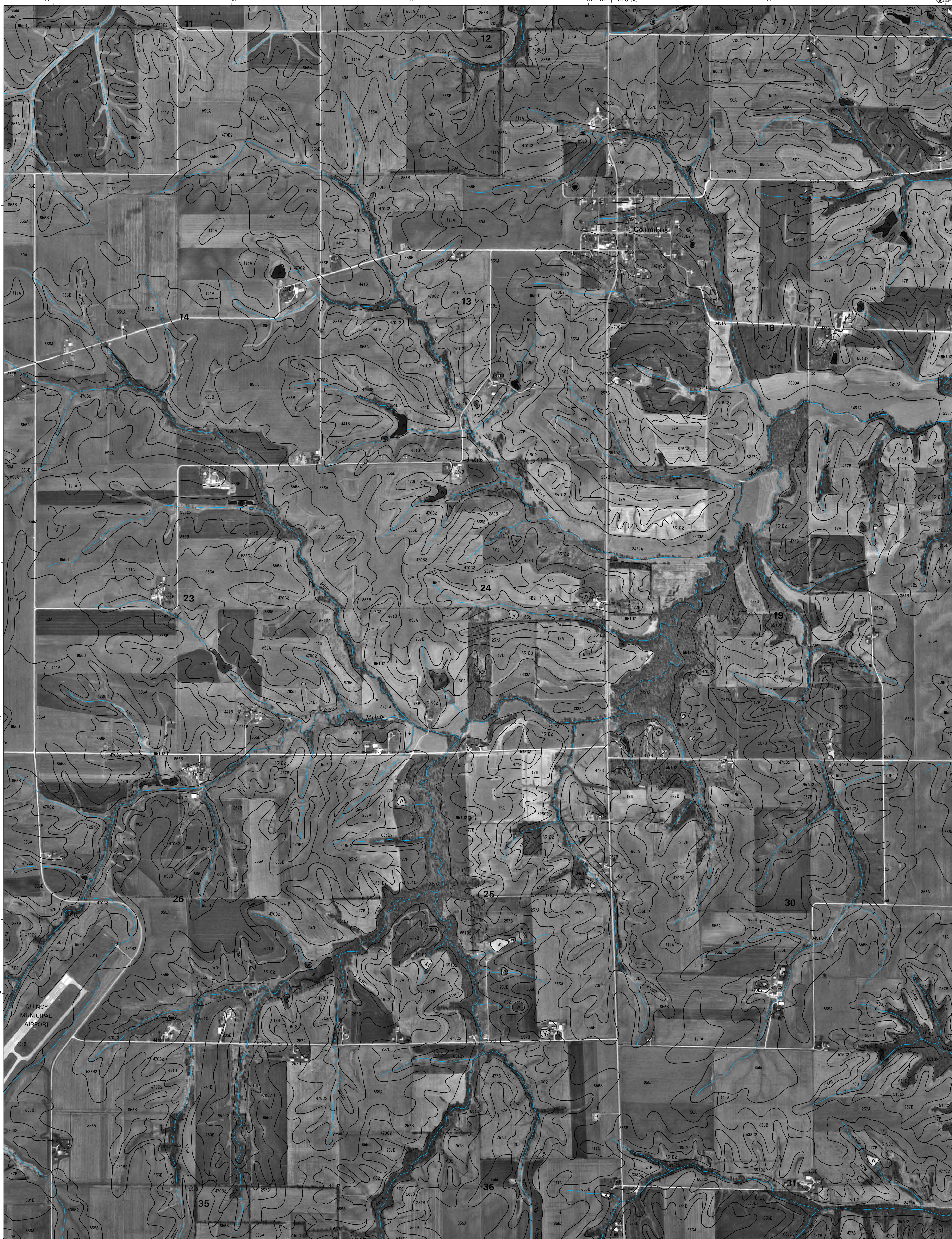
COLUMBUS NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 48 OF 82

91°11′15″ 40°00′00″ — 91°07′30″ 40°00′00″



39°56′15″ 91°11′15″ — 39°56′15″ 91°07′30″

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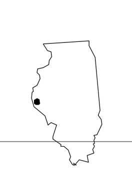
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 COATSBURG SW (SHEET 38)
2 COATSBURG SE (SHEET 39)
3 CAMP POINT SW (SHEET 40)
4 COLUMBUS NW (SHEET 48)
5 LIBERTY NW (SHEET 50)
6 COLUMBUS SW (SHEET 58)
7 COLUMBUS SE (SHEET 59)
8 LIBERTY SW (SHEET 60)

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COLUMBUS NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 49 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LIBERTY NW QUADRANGLE
SHEET NUMBER 50 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 COATSBURG SE (SHEET 39)
2 CAMP POINT SW (SHEET 40)
3 CAMP POINT SE (SHEET 41)
4 COLUMBUS NE (SHEET 49)
5 LIBERTY NE (SHEET 51)
6 COLUMBUS SE (SHEET 59)
7 LIBERTY SW (SHEET 60)
8 LIBERTY SE (SHEET 61)

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LIBERTY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 50 OF 82

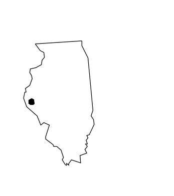
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LIBERTY NE QUADRANGLE
SHEET NUMBER 51 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 CAMP POINT SW (SHEET 40)
2 CAMP POINT SE (SHEET 41)
3 CLAYTON SW (SHEET 42)
4 LIBERTY NW (SHEET 50)
5 KELLERVILLE NW (SHEET 52)
6 LIBERTY SW (SHEET 60)
7 LIBERTY SE (SHEET 61)
8 KELLERVILLE SW (SHEET 62)

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LIBERTY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 51 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
KELLERVILLE NW QUADRANGLE
SHEET NUMBER 52 OF 82

91°00'00" 40°00'00"

90°56'15" 40°00'00"

39°56'15" 91°00'00"

39°56'15" 90°56'15"

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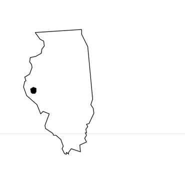
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 CAMP POINT SE (SHEET 41)
2 CLAYTON SW (SHEET 42)
3 CLAYTON SE (SHEET 43)
4 LIBERTY NE (SHEET 51)
5 KELLERVILLE NE (SHEET 53)
6 LIBERTY SE (SHEET 61)
7 KELLERVILLE SW (SHEET 62)
8 KELLERVILLE SE (SHEET 63)

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KELLERVILLE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 52 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SCALE 1:12000

MILES

FEET

KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 CLAYTON SW (SHEET 42)
2 CLAYTON SE (SHEET 43)
3 LAKE MOUNT STERLING SW
4 KELLERVILLE NW (SHEET 52)
5 MOUNT STERLING NW
6 KELLERVILLE SW (SHEET 62)
7 KELLERVILLE SE (SHEET 63)
8 MOUNT STERLING SW

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KELLERVILLE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 53 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY WEST SW QUADRANGLE
SHEET NUMBER 54 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MAYWOOD NE
2 QUINCY WEST NW (SHEET 44)
3 QUINCY WEST NE (SHEET 45)
4 MAYWOOD SE
5 QUINCY WEST SE (SHEET 55)
6 PALMYRA NE
7 QUINCY SW NW (SHEET 64)
8 QUINCY SW NE (SHEET 65)

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QUINCY WEST SW, ILLINOIS
3.75 MINUTE SERIES
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This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 QUINCY WEST NW (SHEET 44)
2 QUINCY WEST NE (SHEET 45)
3 QUINCY EAST NW (SHEET 46)
4 QUINCY WEST SW (SHEET 54)
5 QUINCY EAST SW (SHEET 56)
6 QUINCY SW NW (SHEET 64)
7 QUINCY SW NE (SHEET 65)
8 MARBLEHEAD NW (SHEET 66)

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QUINCY WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 55 OF 82

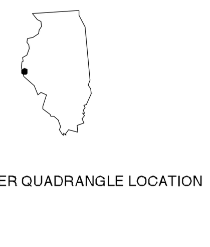
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY EAST SW QUADRANGLE
SHEET NUMBER 56 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 QUINCY WEST NE (SHEET 45)
2 QUINCY EAST NW (SHEET 46)
3 QUINCY EAST NE (SHEET 47)
4 QUINCY WEST SE (SHEET 55)
5 QUINCY EAST SE (SHEET 57)
6 QUINCY SW NE (SHEET 65)
7 MARBLEHEAD NW (SHEET 66)
8 MARBLEHEAD NE (SHEET 67)

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QUINCY EAST SW, ILLINOIS
3.75 MINUTE SERIES
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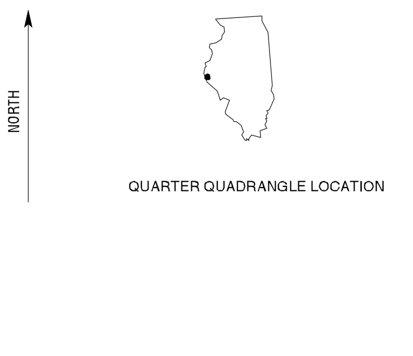
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

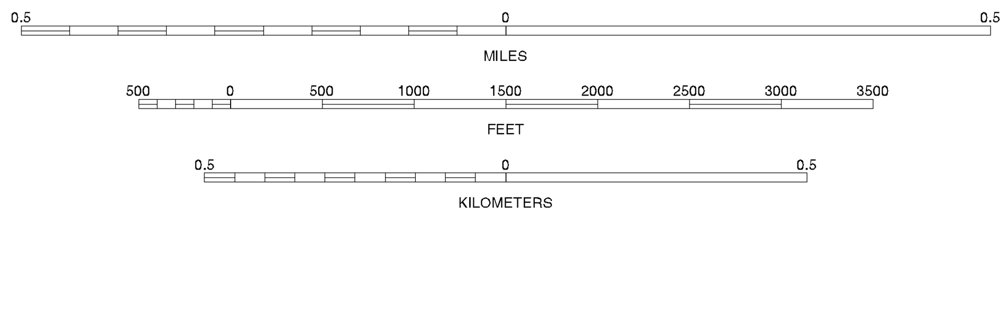
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1 QUINCY EAST NW (SHEET 46)
2 QUINCY EAST NE (SHEET 47)
3 COLUMBUS NW (SHEET 48)
4 QUINCY EAST SW (SHEET 56)
5 COLUMBUS SW (SHEET 58)
6 MARBLEHEAD NW (SHEET 66)
7 MARBLEHEAD NE (SHEET 67)
8 PAYSON NW (SHEET 68)

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QUINCY EAST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 57 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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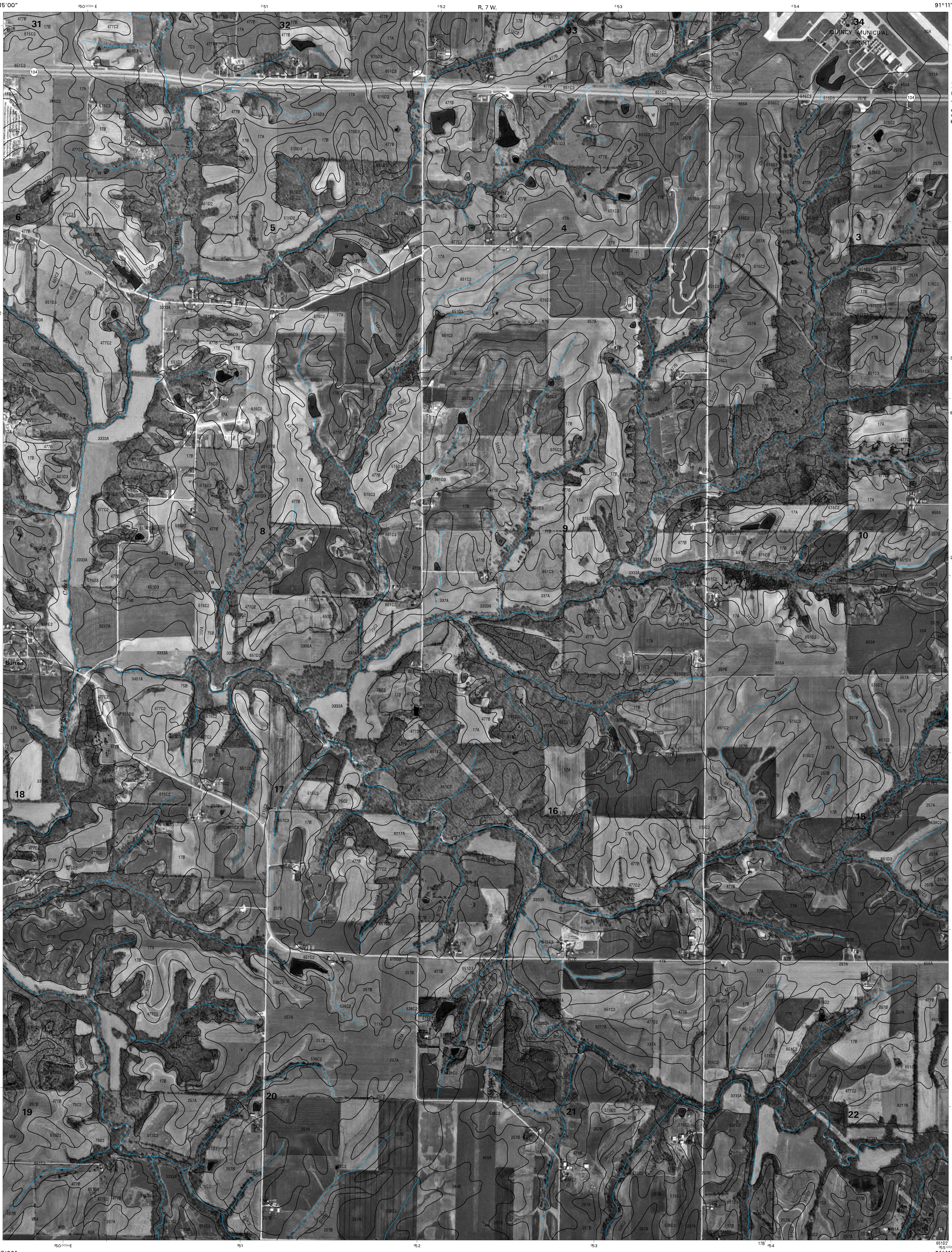

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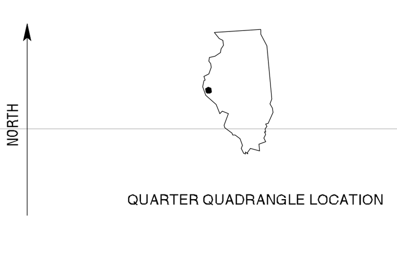
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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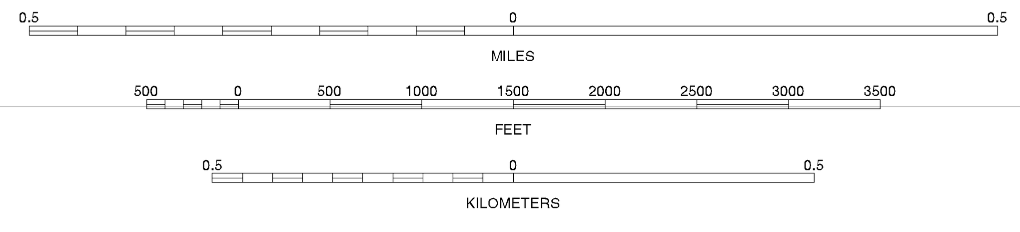

1	2	3
4		5
6	7	8

1 QUINCY EAST NE (SHEET 47)
2 COLUMBUS NW (SHEET 48)
3 COLUMBUS NE (SHEET 49)
4 QUINCY EAST SE (SHEET 57)
5 COLUMBUS SE (SHEET 59)
6 MARBLEHEAD NE (SHEET 67)
7 PAYSON NW (SHEET 68)
8 PAYSON NE (SHEET 69)

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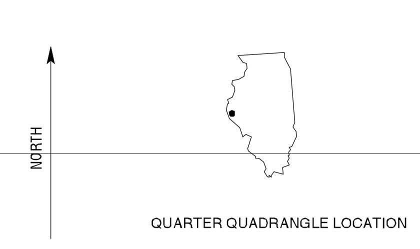
COLUMBUS SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 58 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
COLUMBUS SE QUADRANGLE
SHEET NUMBER 59 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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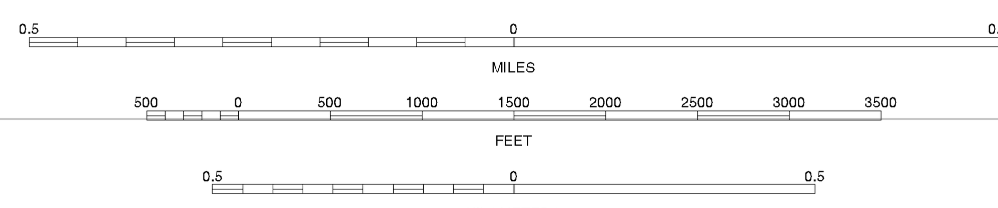

1	2	3
4		5
6	7	8

1 COLUMBUS NW (SHEET 48)
2 COLUMBUS NE (SHEET 49)
3 LIBERTY NW (SHEET 50)
4 COLUMBUS SW (SHEET 58)
5 LIBERTY SW (SHEET 60)
6 PAYSON NW (SHEET 68)
7 PAYSON NE (SHEET 69)
8 RICHFIELD NW (SHEET 70)

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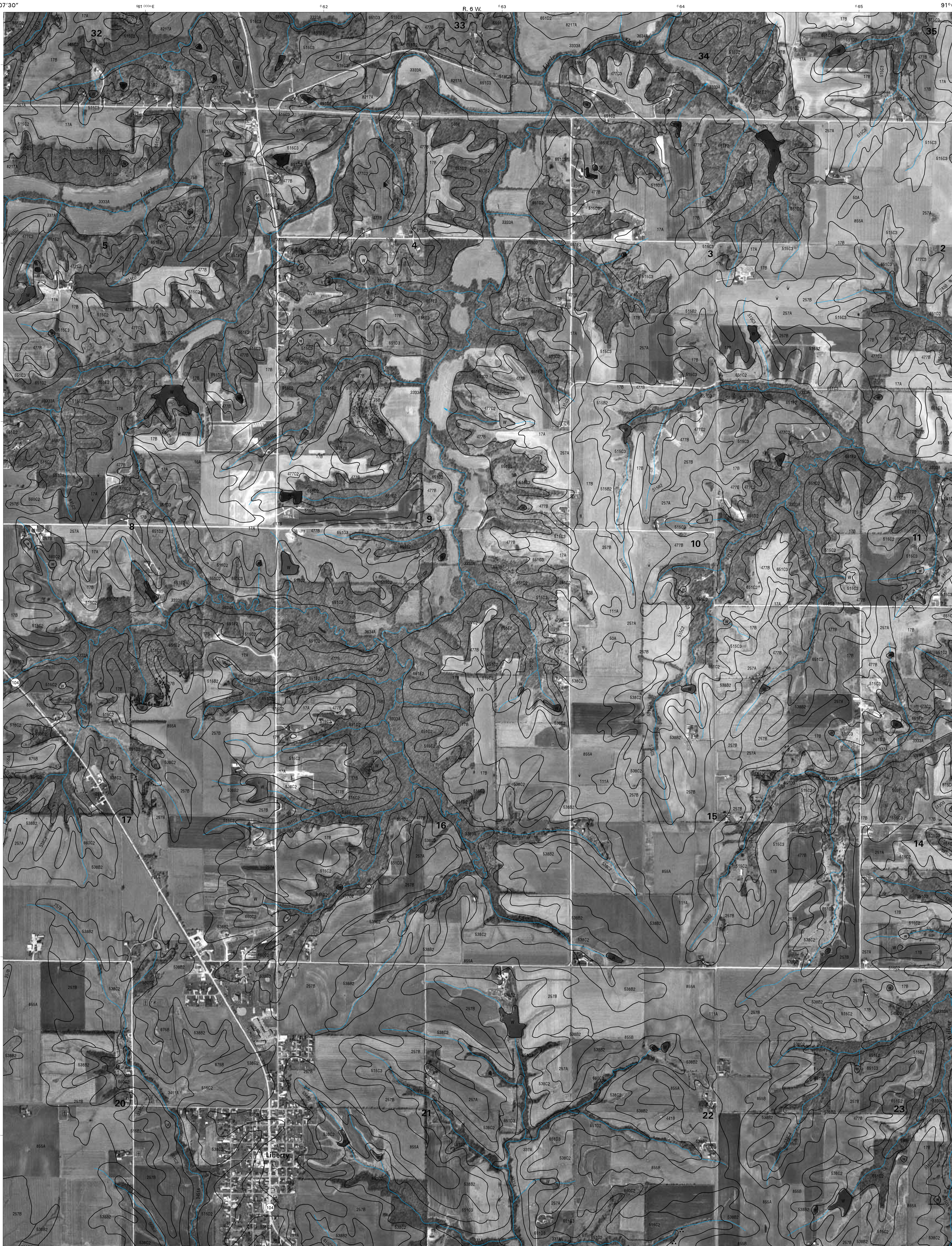
COLUMBUS SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 59 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LIBERTY SW QUADRANGLE
SHEET NUMBER 60 OF 82

91°07′30″ 39°56′15″

91°03′45″ 39°56′15″



39°52′30″ 91°07′30″

39°52′30″ 91°03′45″

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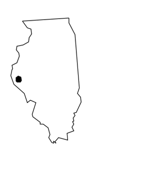
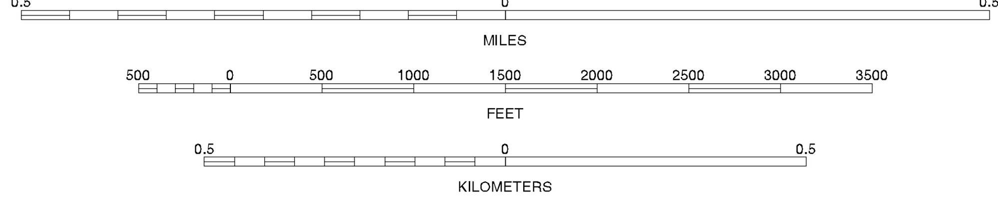
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 COLUMBUS NE (SHEET 49)
2 LIBERTY NW (SHEET 50)
3 LIBERTY NE (SHEET 51)
4 COLUMBUS SE (SHEET 59)
5 LIBERTY SE (SHEET 61)
6 PAYSON NE (SHEET 69)
7 RICHFIELD NW (SHEET 70)
8 RICHFIELD NE (SHEET 71)

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LIBERTY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 60 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
LIBERTY SE QUADRANGLE
SHEET NUMBER 61 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 LIBERTY NW (SHEET 50)
2 LIBERTY NE (SHEET 51)
3 KELLERVILLE NW (SHEET 52)
4 LIBERTY SW (SHEET 60)
5 KELLERVILLE SW (SHEET 62)
6 RICHFIELD NW (SHEET 70)
7 RICHFIELD NE (SHEET 71)
8 FISHHOOK NW (SHEET 72)

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LIBERTY SE, ILLINOIS

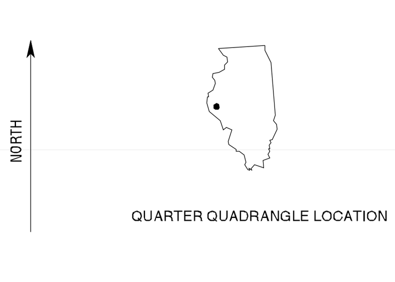
3.75 MINUTE SERIES
SHEET NUMBER 61 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

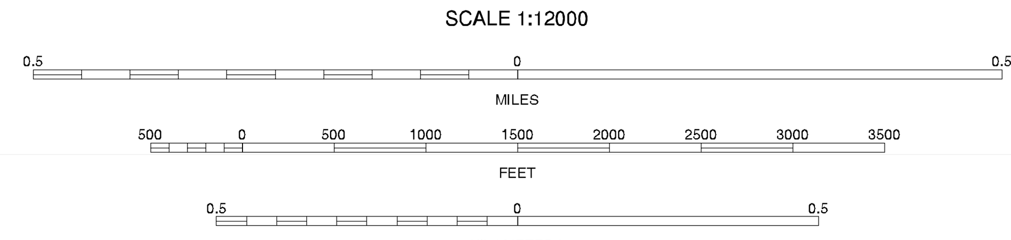
ADAMS COUNTY, ILLINOIS
KELLERVILLE SW QUADRANGLE
SHEET NUMBER 62 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



SCALE 1:12000



1	2	3
4		5
6	7	8

1 LIBERTY NE (SHEET 51)
2 KELLERVILLE NW (SHEET 52)
3 KELLERVILLE NE (SHEET 53)
4 LIBERTY SE (SHEET 61)
5 KELLERVILLE SE (SHEET 63)
6 RICHFIELD NE (SHEET 71)
7 FISHHOOK NW (SHEET 72)
8 FISHHOOK NE (SHEET 73)

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KELLERVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 62 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
KELLERVILLE SE QUADRANGLE
SHEET NUMBER 63 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 KELLERVILLE NW (SHEET 52)
2 KELLERVILLE NE (SHEET 53)
3 MOUNT STERLING NW
4 KELLERVILLE SW (SHEET 62)
5 MOUNT STERLING SW
6 FISHHOOK NW (SHEET 72)
7 FISHHOOK NE (SHEET 73)
8 PERRY WEST NW

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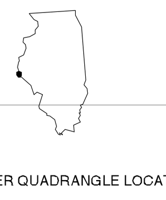
KELLERVILLE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 63 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MAYWOOD SE
2 QUINCY WEST SW (SHEET 54)
3 QUINCY WEST SE (SHEET 55)
4 PALMYRA NE
5 QUINCY SW NE (SHEET 65)
6 PALMYRA SE
7 QUINCY SW SW
8 QUINCY SW SE (SHEET 74)

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QUINCY SW NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 64 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 QUINCY WEST SW (SHEET 54)
2 QUINCY WEST SE (SHEET 55)
3 QUINCY EAST SW (SHEET 56)
4 QUINCY SW NW (SHEET 64)
5 MARBLEHEAD NW (SHEET 66)
6 QUINCY SW SW
7 QUINCY SW SE (SHEET 74)
8 MARBLEHEAD SW (SHEET 75)

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QUINCY SW NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 65 OF 82

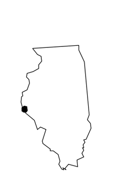
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
MARBLEHEAD NW QUADRANGLE
SHEET NUMBER 66 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 QUINCY WEST SE (SHEET 55)
2 QUINCY EAST SW (SHEET 56)
3 QUINCY EAST SE (SHEET 57)
4 QUINCY SW NE (SHEET 65)
5 MARBLEHEAD NE (SHEET 67)
6 QUINCY SW SE (SHEET 74)
7 MARBLEHEAD SW (SHEET 75)
8 MARBLEHEAD SE (SHEET 76)

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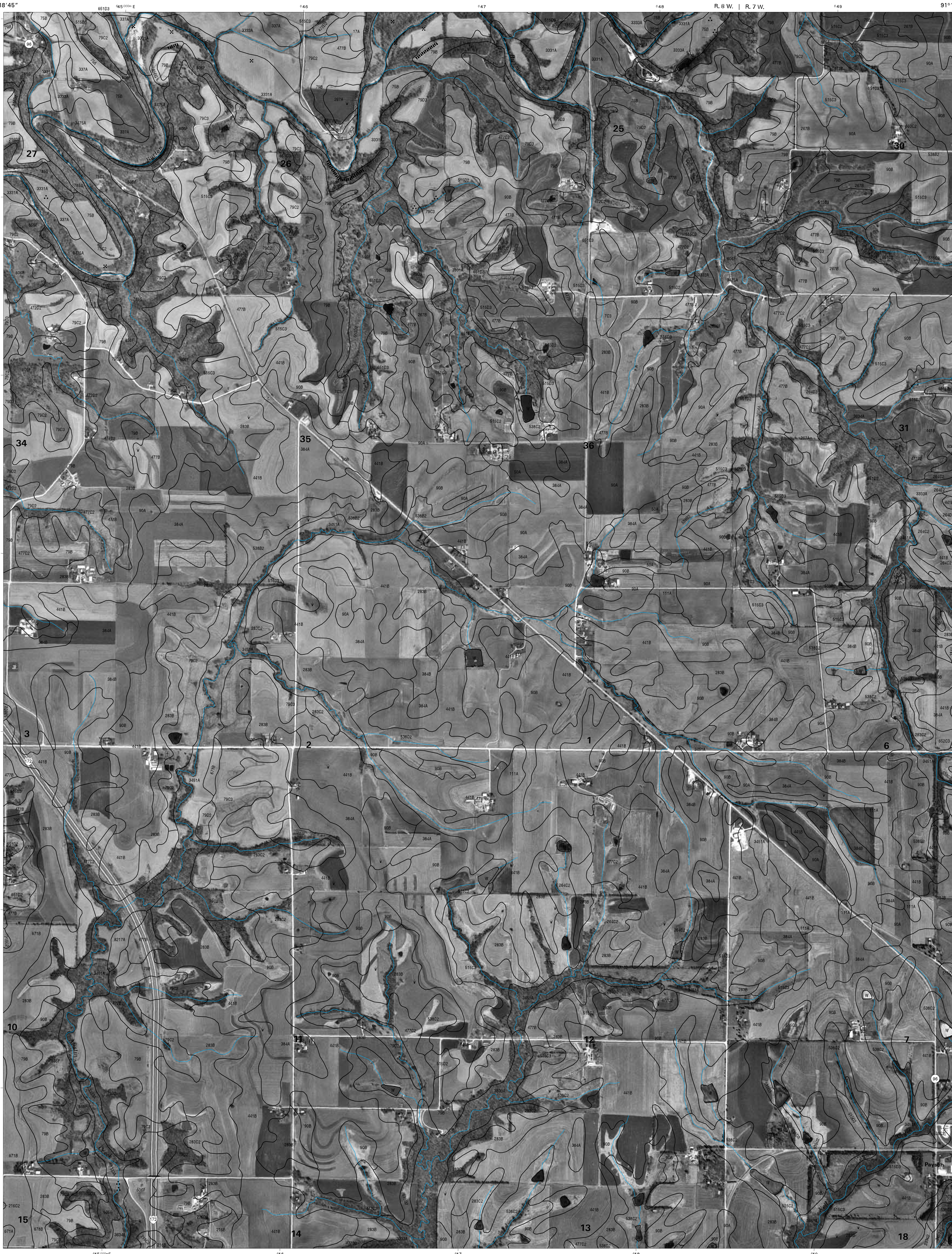
MARBLEHEAD NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 66 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
MARBLEHEAD NE QUADRANGLE
SHEET NUMBER 67 OF 82



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 QUINCY EAST SW (SHEET 56)
2 QUINCY EAST SE (SHEET 57)
3 COLUMBUS SW (SHEET 58)
4 MARBLEHEAD NW (SHEET 66)
5 PAYSON NW (SHEET 68)
6 MARBLEHEAD SW (SHEET 75)
7 MARBLEHEAD SE (SHEET 76)
8 PAYSON SW (SHEET 77)

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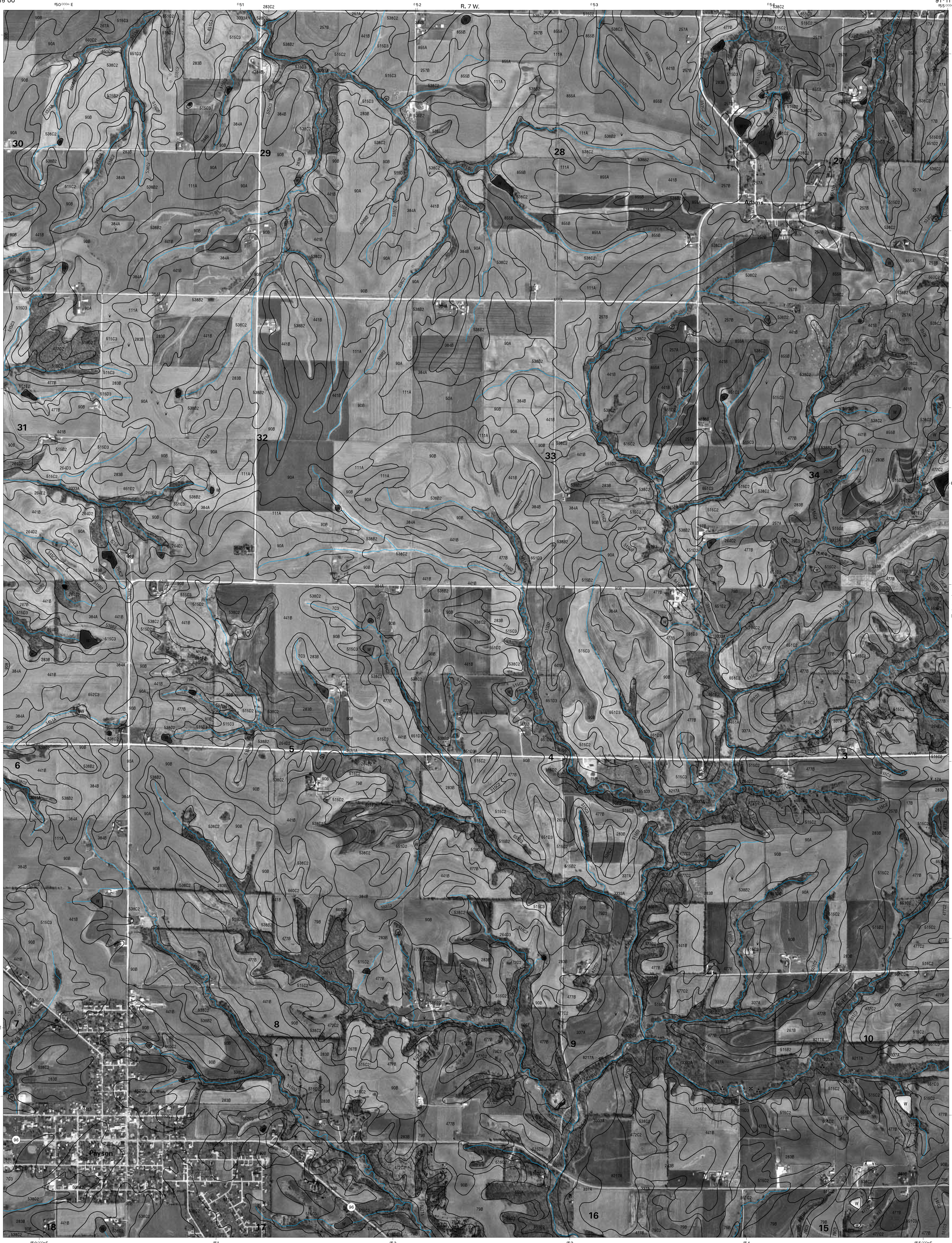
MARBLEHEAD NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 67 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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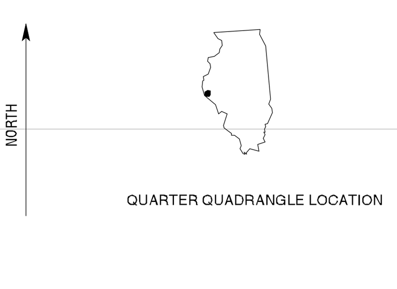
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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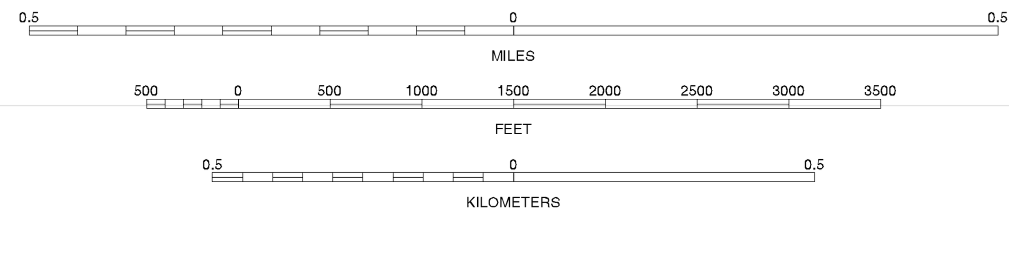

1	2	3
4		5
6	7	8

1 QUINCY EAST SE (SHEET 57)
2 COLUMBUS SW (SHEET 58)
3 COLUMBUS SE (SHEET 59)
4 MARBLEHEAD NE (SHEET 67)
5 PAYSON NE (SHEET 69)
6 MARBLEHEAD SE (SHEET 76)
7 PAYSON SW (SHEET 77)
8 PAYSON SE (SHEET 78)

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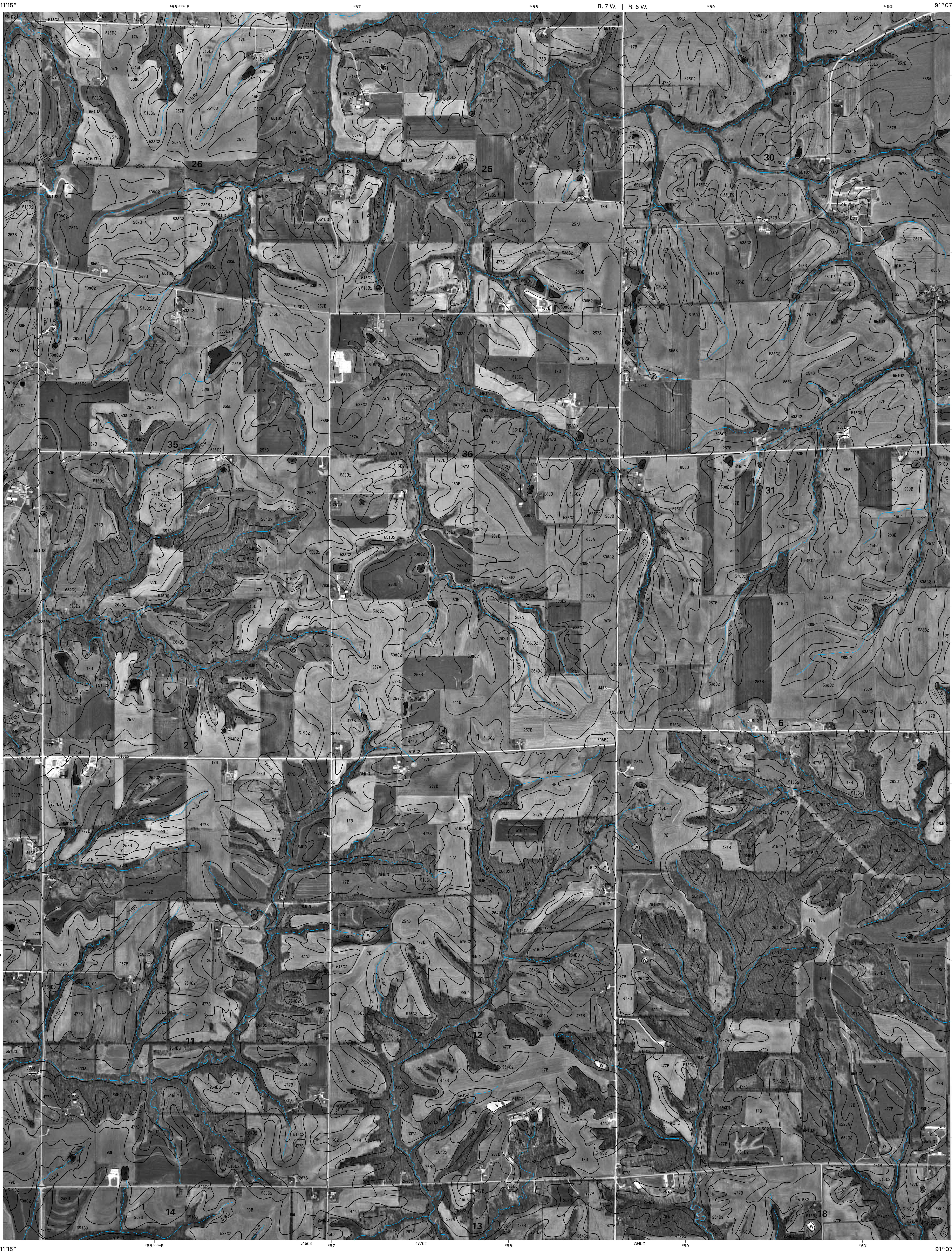
PAYSON NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 68 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
PAYSON NE QUADRANGLE
SHEET NUMBER 69 OF 82

91°11′15″ 39°52′30″ — 91°07′30″ 39°52′30″



39°48′45″ 91°11′15″ — 39°48′45″ 91°07′30″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 COLUMBUS SW (SHEET 58)
2 COLUMBUS SE (SHEET 59)
3 LIBERTY SW (SHEET 60)
4 PAYSON NW (SHEET 68)
5 RICHFIELD NW (SHEET 70)
6 PAYSON SW (SHEET 77)
7 PAYSON SE (SHEET 78)
8 RICHFIELD SW (SHEET 79)

INDEX TO ADJOINING 3.75 MAPS

PAYSON NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 69 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
RICHFIELD NW QUADRANGLE
SHEET NUMBER 70 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 COLUMBUS SE (SHEET 59)
2 LIBERTY SW (SHEET 60)
3 LIBERTY SE (SHEET 61)
4 PAYSON NE (SHEET 69)
5 RICHFIELD NE (SHEET 71)
6 PAYSON SE (SHEET 78)
7 RICHFIELD SW (SHEET 79)
8 RICHFIELD SE (SHEET 80)

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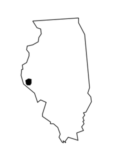
RICHFIELD NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 70 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 LIBERTY SW (SHEET 60)
2 LIBERTY SE (SHEET 61)
3 KELLERVILLE SW (SHEET 62)
4 RICHFIELD NW (SHEET 70)
5 FISHHOOK NW SHEET (SHEET 72)
6 RICHFIELD SW (SHEET 79)
7 RICHFIELD SE SHEET 80)
8 FISHHOOK SW (SHEET 81)

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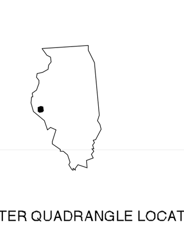
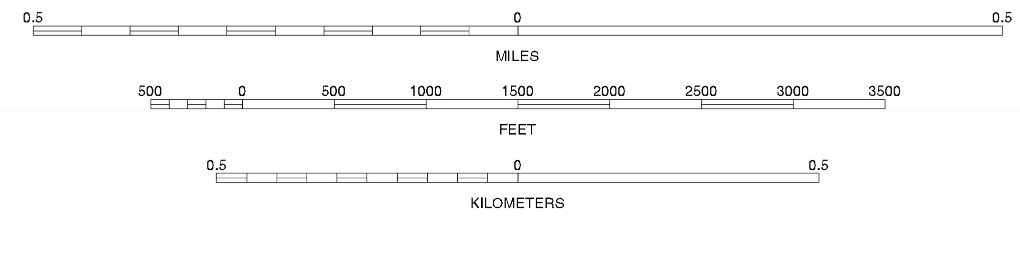
RICHFIELD NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 71 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



SCALE 1:12000



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

1	2	3
4		5
6	7	8

1 LIBERTY SE (SHEET 61)
2 KELLERVILLE SW (SHEET 62)
3 KELLERVILLE SE (SHEET 63)
4 RICHFIELD NE (SHEET 71)
5 FISHHOOK NE (SHEET 73)
6 RICHFIELD SE (SHEET 80)
7 FISHHOOK SW (SHEET 81)
8 FISHHOOK SE (SHEET 82)

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FISHHOOK NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 72 OF 82

UNITED STATES
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 KELLERVILLE SW (SHEET 62)
2 KELLERVILLE SE (SHEET 63)
3 MOUNT STERLING SW
4 FISHHOOK NW (SHEET 72)
5 PERRY WEST NW
6 FISHHOOK SW (SHEET 81)
7 FISHHOOK SE (SHEET 82)
8 PERRY WEST SW

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FISHHOOK NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 73 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
QUINCY SW SE QUADRANGLE
SHEET NUMBER 74 OF 82

91°26′15″ 39°48′45″ 91°22′30″ 39°48′45″

39°45′00″ 91°26′15″ 39°45′00″ 91°22′30″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

1	2	3
4		5
6	7	8

1 QUINCY SW NW (SHEET 64)
2 QUINCY SW NE (SHEET 65)
3 MARBLEHEAD NW (SHEET 66)
4 QUINCY SW SW
5 MARBLEHEAD SW (SHEET 75)
6 HANNIBAL WEST NW
7 HANNIBAL WEST NE
8 HANNIBAL EAST NW

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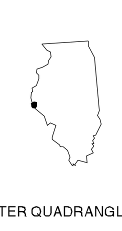
QUINCY SW SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 74 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 QUINCY SW NE (SHEET 65)
2 MARBLEHEAD NW (SHEET 66)
3 MARBLEHEAD NE (SHEET 67)
4 QUINCY SW SE (SHEET 74)
5 MARBLEHEAD SE (SHEET 76)
6 HANNIBAL WEST NE
7 HANNIBAL EAST NW
8 HANNIBAL EAST NE

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MARBLEHEAD SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 75 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
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ADAMS COUNTY, ILLINOIS
MARBLEHEAD SE QUADRANGLE
SHEET NUMBER 76 OF 82

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1993 - 1996 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 MARBLEHEAD NW (SHEET 66)
2 MARBLEHEAD NE (SHEET 67)
3 PAYSON NW (SHEET 68)
4 MARBLEHEAD SW (SHEET 75)
5 PAYSON SW (SHEET 77)
6 HANNIBAL EAST NW
7 HANNIBAL EAST NE
8 HULL NW

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MARBLEHEAD SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 76 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
PAYSON SW QUADRANGLE
SHEET NUMBER 77 OF 82

91°15′00″ 39°48′45″ — 91°11′15″ 39°48′45″

39°45′00″ 91°15′00″ — 39°45′00″ 91°11′15″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 MARBLEHEAD NE (SHEET 67)
2 PAYSON NW (SHEET 68)
3 PAYSON NE (SHEET 69)
4 MARBLEHEAD SE (SHEET 76)
5 PAYSON SE (SHEET 78)
6 HANNIBAL EAST NE
7 HULL NW
8 HULL NE

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PAYSON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 77 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
PAYSON SE QUADRANGLE
SHEET NUMBER 78 OF 82

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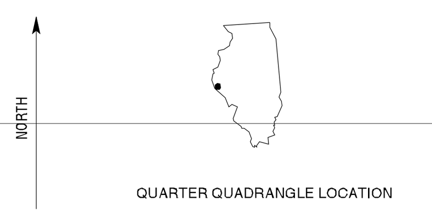
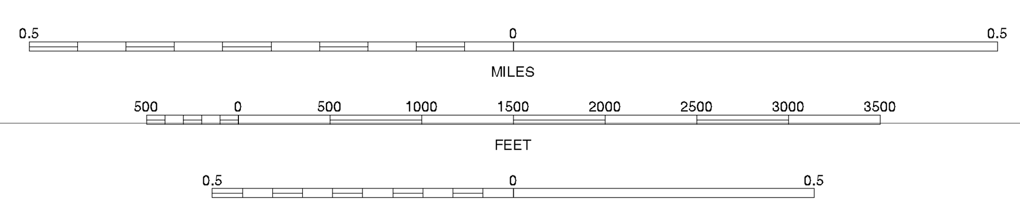
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 PAYSON NW (SHEET 68)
2 PAYSON NE (SHEET 69)
3 RICHFIELD NW (SHEET 70)
4 PAYSON SW (SHEET 77)
5 RICHFIELD SW (SHEET 79)
6 HULL NW
7 HULL NE
8 BARRY NW

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PAYSON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 78 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
RICHFIELD SW QUADRANGLE
SHEET NUMBER 79 OF 82

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 PAYSON NE (SHEET 69)
2 RICHFIELD NW (SHEET 70)
3 RICHFIELD NE (SHEET 71)
4 PAYSON SE (SHEET 78)
5 RICHFIELD SE (SHEET 80)
6 HULL NE
7 BARRY NW
8 BARRY NE

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RICHFIELD SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 79 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
RICHFIELD SE QUADRANGLE
SHEET NUMBER 80 OF 82

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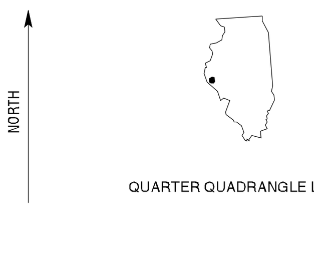

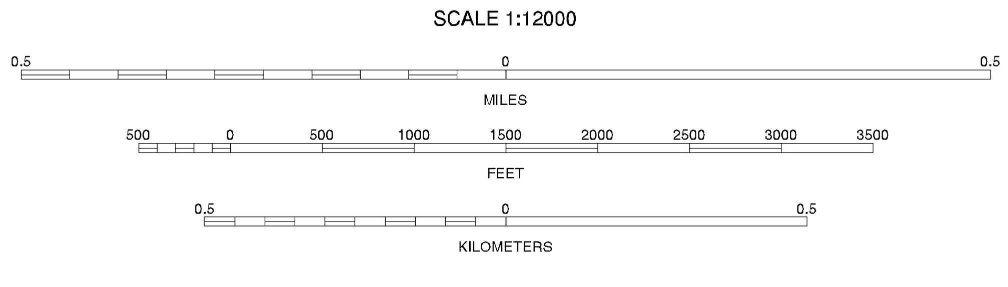

1	2	3
4		5
6	7	8

1 RICHFIELD NW (SHEET 70)
2 RICHFIELD NE (SHEET 71)
3 FISHHOOK NW (SHEET 72)
4 RICHFIELD SW (SHEET 79)
5 FISHHOOK SW (SHEET 81)
6 BARRY NW
7 BARRY NE
8 BAYLIS NW

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RICHFIELD SE, ILLINOIS
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 RICHFIELD NE (SHEET 71)
2 FISHHOOK NW (SHEET 72)
3 FISHHOOK NE (SHEET 73)
4 RICHFIELD SE (SHEET 80)
5 FISHHOOK SE (SHEET 82)
6 BARRY NE
7 BAYLIS NW
8 BAYLIS NE

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FISHHOOK SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 81 OF 82

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ADAMS COUNTY, ILLINOIS
FISHHOOK SE QUADRANGLE
SHEET NUMBER 82 OF 82

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
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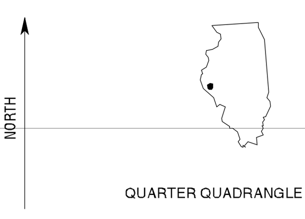

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 FISHHOOK NW (SHEET 72)
2 FISHHOOK NE (SHEET 73)
3 PERRY WEST NW
4 FISHHOOK SW (SHEET 81)
5 PERRY WEST SW
6 BAYLIS NW
7 BAYLIS NE
8 NEW SALEM NW

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